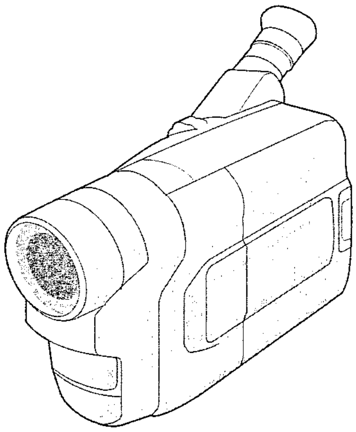
JVC

SERVICE MANUAL

DIGITAL CAMCORDER

GR-DVF1EG/DVF1EK/DVF3A



Mini DV PAL

SPECIFICATIONS *(The specifications shown pertain specifically to the model GR-DVF1EG)*

Camcorder

General

Power supply	DC 6.0 V ⎓
Power consumption	
Light on	Approx. 8.0 W
Light off	Approx. 5.0 W
Format	DV Format (SD mode)
Signal format	PAL Standard
Video signal recording format	Digital Component Recording
Cassette	Mini DV Cassette
Tape Speed	SP: 18.8 mm/s LP: 12.5 mm/s
Maximum recording time	SP: 60 min. LP: 90 min. (using M-DV60ME cassette)
Pickup	1/4" CCD
Lens	F1.6, f = 3.9 to 62.4 mm, 16:1 Power Zoom Lens
Filter diameter	ø40.5 mm
Viewfinder	Electronic viewfinder with 0.55" colour LCD
Operating temperature	0°C to 40°C
Operating humidity	35% to 80%
Storage temperature	–20°C to 50°C
Dimensions	89 (W) x 119 (H) x 198 (D) mm (with the viewfinder fully tilted downward)
Weight	Approx. 640 g

Connectors

S-Video	Y: 1Vp-p, 75 Ω, analogue output C: 0.29 Vp-p, 75 Ω, analogue output
JLIP	ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Video	1 Vp-p, 75 Ω unbalanced, analogue output (via Video output connector)
Audio	–8 dBs, 1 kΩ analogue output (via Audio output connector)
External microphone input	–68 dBs, high impedance unbalanced with ø3.5 mm (stereo)

AC Power Adapter/Charger AA-V15EG

Power requirement	AC 110 V to 240 V~, 50/60 Hz
Power consumption	23 W
Output	
Charge	DC 8.5 V ⎓, 1.3 A
VTR	DC 6.3 V ⎓, 1.8 A
Charging system	Constant current, peak detection, timer controlled
Dimensions	140 (W) x 42 (H) x 68 (D) mm
Weight	Approx. 300 g

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

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TABLE OF CONTENTS

Section Title Page

Important Safety Precautions

INSTRUCTIONS (This instruction refer to the GR-DVF1EG)

1. DISASSEMBLY

1.1 SERVICE CAUTIONS 1-1
  1.1.1 Precautions 1-1
  1.1.2 How to read the disassembly and assembly 1-1
  1.1.3 Connection of the wires 1-1
  1.1.4 Main screws to deal with disassembly/assembly 1-2
1.2 TOOLS REQUIRED FOR ADJUSTMENTS 1-2
1.3 DISASSEMBLY/ASSEMBLY OF CABINET PARTS 1-3
  1.3.1 Disassembly flow chart 1-3
  1.3.2 Disassembly method 1-4
1.4 DISASSEMBLING/REASSEMBLING CAMERA SECTION AND DECK SECTION 1-6
  1.4.1 Flowchart of disassembling 1-6
  1.4.2 Disassembly method 1-7
1.5 REPLACEMENT OF CCD IMAGE SENSOR 1-9
  1.5.1 Removal of CCD image sensor 1-9
  1.5.2 Installation of new CCD image sensor 1-9
  1.5.3 Replacement of CCD board assy 1-9
1.6 HOW TO TAKE OUT TAPE MANUALLY 1-10
1.7 EXTENSION CABLE CONNECTION 1-11
1.8 SERVICE NOTE 1-12
1.9 EMERGENCY DISPLAY 1-13
1.10 DEMONSTRATION MODE 1-13

2. MECHANISM ADJUSTMENT

2.1 PRELIMINARY REMARKS ON ADJUSTMENT AND REPAIR 2-1
  2.1.1 Precautions 2-1
  2.1.2 Necessary jigs 2-1
  2.1.3 Notes on disassembling/reassembling procedure 2-1
  2.1.4 Screws and washers used in mechanism 2-1
2.2 DISASSEMBLING/REASSEMBLING MECHANISM ASSEMBLY 2-2
  2.2.1 General statement 2-2
  2.2.2 Explanation of mechanism mode 2-2
  2.2.3 Mechanism timing chart 2-3
  2.2.4 Disassembling/reassembling mechanism assembly ... 2-4
  2.2.5 Disassembling/reassembling 2-7
  2.2.6 List of procedures for disassembly 2-13
  2.2.7 Checkup and adjustment of mechanism phase 2-14
  2.2.8 Reassembling slide deck assembly and main deck assembly 2-15
  2.2.9 Locating tension pole 2-16
2.3 PROCEDURE OF COMPATIBILITY AND P.B. EQ. (ERROR RATE) ADJUSTMENTS 2-17
  2.3.1 Precautions 2-17
  2.3.2 Preparation for adjustment 2-17
  2.3.3 Linearity adjustment 2-18
  2.3.4 PB switching point adjustment 2-18
  2.3.5 Head REC current adjustment 2-18
  2.3.6 P.B. EQ. (error rate) adjustment (for SP and LP) 2-19
  2.3.7 Measurement method of P.B. EQ. (error rate) 2-19
2.4 JIG CONNECTOR CABLE (YTU93082C) CONNECTION 2-20
2.5 SERVICE NOTE 2-21

3. ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT 3-1
  3.1.1 PREPARATION 3-1

Section Title Page

4. CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM 4-1
CIRCUIT BOARD NOTES 4-2
4.1 BOARD INTERCONNECTIONS 4-3
4.2 SYSCON SCHEMATIC DIAGRAM 4-5
4.3 MSD CPU SCHEMATIC DIAGRAM 4-7
4.4 JACK AND IR SCHEMATIC DIAGRAMS 4-9
4.5 A/V OUT SCHEMATIC DIAGRAM 4-11
4.6 VIDEO 2 SCHEMATIC DIAGRAM 4-13
4.7 VIDEO 3 SCHEMATIC DIAGRAM 4-15
4.8 VIDEO 1 SCHEMATIC DIAGRAM 4-17
4.9 YMCA/SSG SCHEMATIC DIAGRAM 4-19
4.10 IRIS & AF/ZOOM SCHEMATIC DIAGRAM 4-21
4.11 CDS/AGC SCHEMATIC DIAGRAM 4-23
4.12 REGULATOR SCHEMATIC DIAGRAM 4-25
4.13 LCD CTL SCHEMATIC DIAGRAM 4-27
4.14 MAIN CIRCUIT BOARD 4-29
4.15 MDA SCHEMATIC DIAGRAM 4-35
4.16 AUDIO AD/DA SCHEMATIC DIAGRAM 4-37
4.17 MAIN AUDIO SCHEMATIC DIAGRAM 4-39
4.18 SHUTTER MIX AND PRE/REC SCHEMATIC DIAGRAMS 4-41
4.19 SECOND CIRCUIT BOARD 4-43
4.20 JUNCTION SCHEMATIC DIAGRAM 4-46
4.21 JUNCTION CIRCUIT BOARD 4-47
4.22 CCD SCHEMATIC DIAGRAM 4-48
4.23 CCD CIRCUIT BOARD 4-49
4.24 MIC JACK SCHEMATIC DIAGRAM AND MIC JACK CIRCUIT BOARD 4-50
4.25 ZOOM UNIT AND OPERATION (DECK) UNIT SCHEMATIC DIAGRAMS 4-51
4.26 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM 4-53
4.27 ELECTRONIC VIEWFINDER CIRCUIT BOARD 4-55
4.28 POWER SYSTEM BLOCK DIAGRAM 4-57
4.29 REGULATOR SYSTEM BLOCK DIAGRAM 4-59
4.30 VIDEO SYSTEM BLOCK DIAGRAM 4-61
4.31 AUDIO SYSTEM BLOCK DIAGRAM 4-65
4.32 VOLTAGE CHARTS 4-67

5. PARTS LIST

5.1 PACKING ASSEMBLY <M1> 5-1
5.2 FINAL ASSEMBLY <M2> 5-3
5.3 MECHANISM ASSEMBLY <M3> 5-6
5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4> 5-8
5.5 ELECTRICAL PARTS LIST 5-9
  MAIN BOARD ASSEMBLY <01> 5-9
  SECOND BOARD ASSEMBLY <02> 5-16
  JUNCTION BOARD ASSEMBLY <03> 5-19
  CCD BOARD ASSEMBLY <04> 5-19
  MIC JACK BOARD ASSEMBLY <05> 5-19
  BL BOARD ASSEMBLY <06> 5-19
  ZOOM UNIT <08> 5-19
  OPERATION (DECK) UNIT <09> 5-20
  VF BOARD ASSEMBLY <10> 5-20

6. AC POWER ADAPTER

6.1 CABINET ASSEMBLY <M2> 6-1
6.2 SCHEMATIC DIAGRAM 6-2
6.3 CIRCUIT BOARD 6-4
6.4 ELECTRICAL PARTS LIST 6-5

The following table lists the differing points between Models GR-DVF1EG, GR-DVF1EK and GR-DVF3A in this series.

	GR-DVF1EG	GR-DVF1EK	GR-DVF3A
DIGITAL ZOOM	4X/10X	4X/10X	8X/20X
TOTAL ZOOM RATIO	160X	160X	320X
DIGITAL ZOOM SELECT	64/160	64/160	128/320
PLAY BACK DIGITAL ZOOM	10X	10X	20X
CONVERSION PLUG	NO	NO	YES
AC ADAPTER CHARGER	AA-V15EG🄲	AA-V15EK🄲	AA-V15EG🄰

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

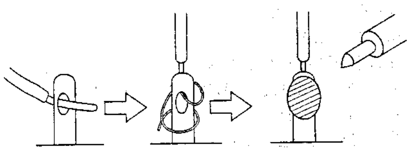


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

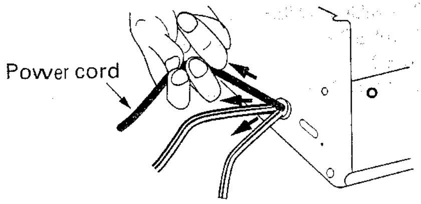


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

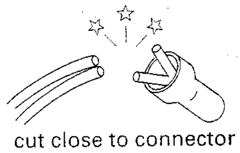


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

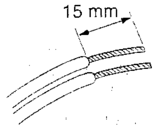


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

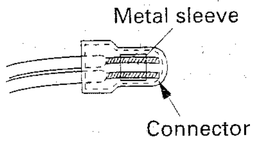


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

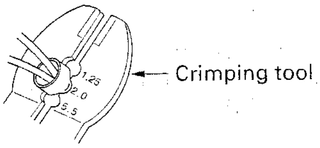


Fig.6

(5) Check the four points noted in Fig.7.

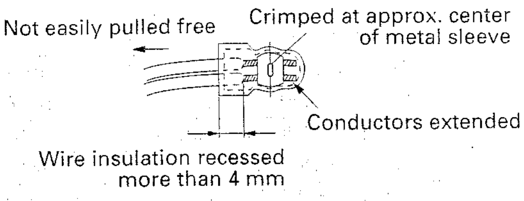

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

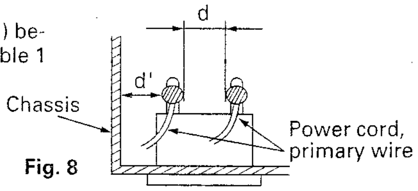


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method : (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

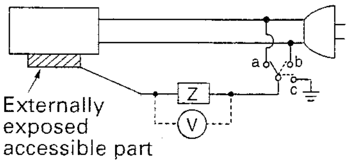


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

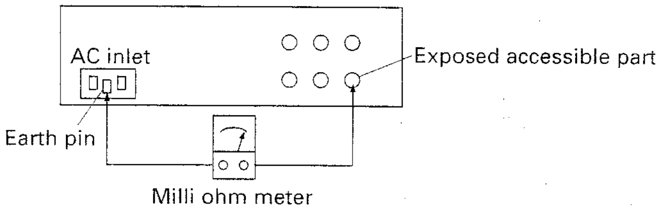


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Dear Customer,

Thank you for purchasing this digital camcorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of this product.

Using This Instruction Manual

- All major sections and subsections are listed in the Table Of Contents (☞ pg. 5).
- Notes appear after most subsections. Be sure to read these as well.
- Basic and advanced features/operation are separated for easier reference.

It is recommended that you . . .

.... refer to the Index (☞ pgs. 62 – 66) and familiarize yourself with button locations, etc. before use.

.... read thoroughly the Safety Precautions. They contain extremely important information regarding the safe use of this product.

You are recommended to carefully read the cautions on pages 67 and 68 before use.

SAFETY PRECAUTIONS

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

Warning on lithium cell battery (for clock operation and remote control unit)

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.

Replace the battery with Maxell, Panasonic (Matsushita Electric), Sanyo or Sony CR2025; use of another battery may present a risk of fire or explosion.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

CAUTIONS:

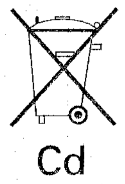
- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC Power Adapter/Charger for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

NOTES:

- *The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.*
- *The rating plate (serial number plate) of the AC Power Adapter/Charger is on its bottom.*

This camcorder is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording and viewfinder playback are possible anywhere. Use the BN-V12U/V20U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

Crossed Out Dust Bin Mark



- The Crossed Out Dust Bin Mark on the battery pack indicates that the product complies with Directives 91/157/EEC and 93/86/EEC.
- Nickel-Cadmium (Ni-Cd) battery pack must be recycled or disposed of properly.

This unit is produced to comply with Standard IEC Publ. 65.

SAFETY PRECAUTIONS

Do not point the lens or the viewfinder directly into the sun. This can cause eye injuries, as well as lead to the malfunctioning of internal circuitry. There is also a risk of fire or electric shock.

CAUTION! The following notes concern possible physical damage to the camcorder and to the user.

When carrying, be sure to always securely attach and use the provided shoulder strap. Carrying or holding the camcorder by the viewfinder can result in dropping the unit, or in a malfunction.

Take care not to get your finger caught in the cassette cover. Do not let children operate the camcorder, as they are particularly susceptible to this type of injury.

Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the camcorder.

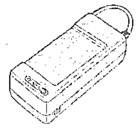
CAUTION! Connecting cables (Audio/Video, S-Video, Editing, DC) to the camcorder and leaving the unit on top of the TV is not recommended, as tripping on the cables will cause the camcorder to fall, resulting in damage.

About Batteries

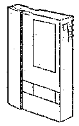
DANGER! Do not attempt to take the batteries apart, or expose them to flame or excessive heat, as there is a risk of fire or explosion.

WARNING! Do not allow the battery terminals, or the battery itself, to come in contact with metals, as this can result in a short circuit and possibly start a fire.

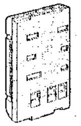
PROVIDED ACCESSORIES



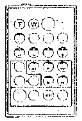
- **AC Power Adapter/ Charger AA-V15EG**



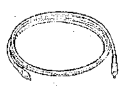
- **MiniDV Cassette Tape 30 Min (DVM-30) M-DV30ME**



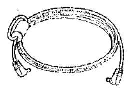
- **Battery Pack BN-V12U**



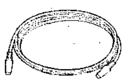
- **Remote Control Unit RM-V712U**



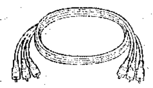
- **Editing Cable**



- **DC Cord**



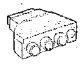
- **S-Video Cable**



- **Audio/Video (A/V) cable**

- **Shoulder Strap**

- **Lithium Battery CR2025 x 2 (for clock operation and remote control unit)**



- **Cable Adapter**

Mini DV PAL

- This camcorder is designed exclusively for the digital video cassette. Only cassettes marked MiniDV can be used with this unit.

Before recording an important scene . . .

.... make sure you only use cassettes with the Mini DV mark MiniDV.

.... remember that this camcorder is not compatible with other digital video formats.

.... remember that this camcorder is intended for private consumer use only. Any commercial use without proper permission is prohibited. (Even if you record an event such as a show, performance or exhibition for personal enjoyment, it is strongly recommended that you obtain permission beforehand.)

ABOUT DV

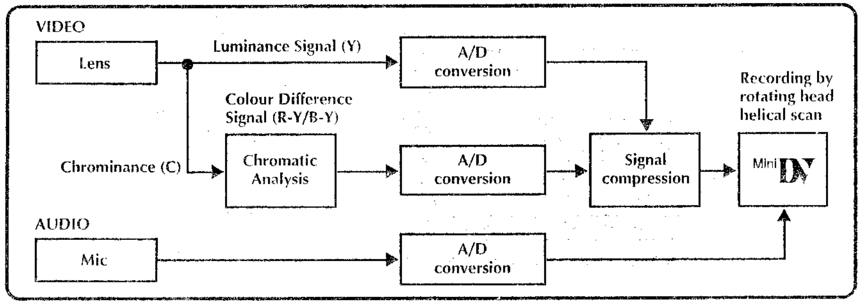
The digital camcorder converts incoming audio and video signals into digital form for recording.

A video signal is composed of a luminance signal (Y) and colour signals (R-Y and B-Y). These signals are identified and recorded digitally (Digital Component Recording). The A/D (Analogue to Digital) converter samples the Y signal at 13.5 MHz, and R-Y and B-Y at 6.75 MHz, and changes them to an 8-bit quantum signal.

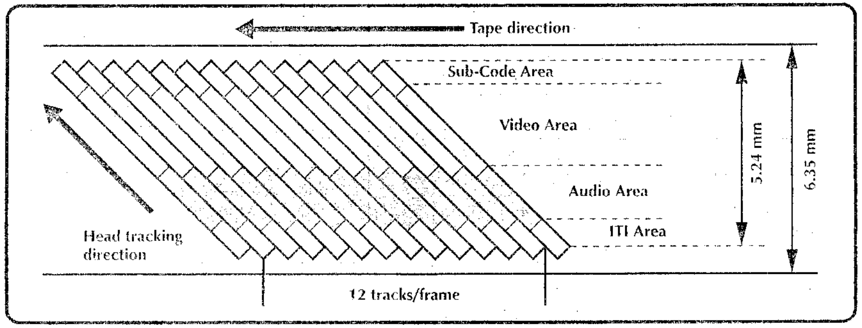
Sound sampled at 48 kHz is changed to a 16-bit quantum signal, and sound sampled at 32 kHz is converted to a 12-bit signal.

NOTE:

The data recorded on a tape is digital, but the output of this camcorder is analogue.


VIDEO
Lens
Luminance Signal (Y)
A/D conversion
Colour Difference Signal (R-Y/B-Y)
Chrominance (C)
Chromatic Analysis
A/D conversion
Signal compression
Recording by rotating head helical scan
Mini DV
AUDIO
Mic
A/D conversion

This camcorder separates the data into blocks, writing one block of each data type on each track of the tape.


Tape direction
Sub-Code Area
Video Area
Audio Area
ITI Area
Head tracking direction
12 tracks/frame
5.24 mm
6.35 mm

① Sub-Code Area

The Time Code and Date/Time data are written here, separate from the video data. This enables you to display the date and time during playback, even if they weren't displayed while recording.

② Video Area

The digital video signal is recorded here.

③ Audio Area

The digital audio signal is recorded here.

④ ITI (Insert and Tracking Information) Area

Insert editing and post-recording editing tracking signals are recorded here.

CONTENTS

PROVIDED ACCESSORIES 3

ABOUT DV 4

GETTING STARTED 6 – 13

Power 6
Clock (Lithium) Battery Insertion/Removal 8
Date/Time Settings 9
Loading/Unloading A Cassette 10
Recording Mode Setting 11
Grip Adjustment 12
Viewfinder Adjustment 12
Shoulder Strap Attachment 13
Tripod Mounting 13

RECORDING 14 – 35

Basic Recording 14
Advanced Features 19

PLAYBACK 36 – 41

Basic Playback 36
Advanced Features 38
Connections 40

TAPE DUBBING 42

USING THE REMOTE CONTROL UNIT 43 – 55

Random Assemble Editing 48
For More Accurate Editing 52
Audio Dubbing 54

TROUBLESHOOTING 56 – 60

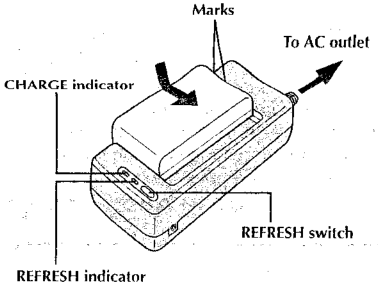
USER MAINTENANCE 61

INDEX 62 – 66

Controls, Connectors And Indicators 62
Indications 64
Terms 66

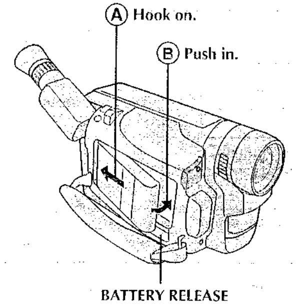
CAUTIONS 67 – 68

SPECIFICATIONS 69



REFRESH
The AC Power Adapter/Charger features a REFRESH function that allows you to fully discharge the battery pack before recharging.
Perform the REFRESH function after no less than 5 chargings.

To discharge the battery . . .
.... attach the battery pack to the adapter as shown in the above illustration. Then push REFRESH. The REFRESH indicator lights when discharging starts, and goes out when discharging is complete.



ATTENTION:

Before detaching the power source, make sure that the camcorder's power is turned off. Failure to do so can result in a camcorder malfunction.

Power

This camcorder's 3-way power supply system lets you choose the most appropriate source of power.

NOTES:

- *No function is available without power supply.*
- *Use only specified power supply.*
- *Do not use provided power supply units with other equipment.*

CHARGING THE BATTERY PACK

1 SUPPLY POWER
Connect the charger's AC power cord to a wall outlet.

2 ATTACH BATTERY PACK
Align the marks and slide the battery pack in the direction of the arrow until it locks in place.

- The CHARGE indicator begins blinking to indicate charging has started.

3 DETACH BATTERY PACK
When the CHARGE indicator stops blinking but stays lit, charging is finished. Slide the battery pack opposite the direction of the arrow.

Battery pack	Charging time	Discharging time
BN-V12U	approx. 1 hr. 10 min.	approx. 3 hrs. 30 min.
BN-V20U	approx. 1 hr. 50 min.	approx. 6 hrs. 40 min.

USING THE BATTERY PACK

1 ATTACH BATTERY PACK
Hook its end to the camcorder (Ⓐ) and push the battery pack in until it locks in place (Ⓑ).

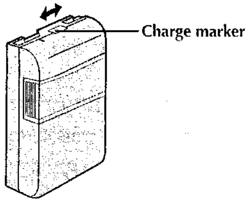
2 DETACH BATTERY PACK
Slide **BATTERY RELEASE** and pull out the battery pack.

Battery pack	Approximate recording time (unit: min.)
BN-V12U	75 (40)
BN-V20U	120 (70)

( ) : when the video light is on.

INFORMATION:

*VU-V856KIT is a set composed of the BN-V856U battery pack and AA-V80EG AC Power Adapter/Charger.
The BN-V856U battery pack provides approx. 7 hours of recording time when the video light is off. Also read thoroughly the VU-V856KIT's instruction manuals.
It is impossible to charge the BN-V856U battery pack using the provided AC Power Adapter/Charger. Use the optional AA-V80EG AC Power Adapter/Charger.*

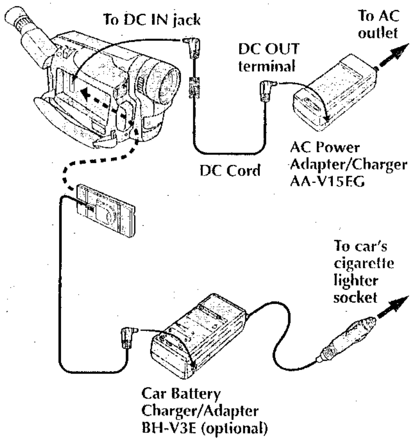


Charge Marker

A charge marker is provided on the battery pack to help you remember whether it has been charged or not. Two colours are provided (red and black)—you choose which one means charged and which means discharged.

NOTES:

- *The recording time per charge is affected by such factors as the time spent in Record-Standby mode and the frequency of zooming. It is safer to have spare battery packs.*
- *Charging times noted on page 6 are for fully discharged battery pack, and discharging times are for fully charged battery pack.*
- *Charging and discharging times vary according to the ambient temperature and the status of the battery pack.*
- *Remember to set the charge marker after charging a battery pack or after detaching a discharged one from your camcorder.*
- *Perform the REFRESH function after no less than 5 chargings.*
- *While the AC Power Adapter/Charger's power cord is disconnected from the AC outlet, it is possible to discharge the battery by pressing the REFRESH switch. During that time, the AC Power Adapter/Charger does not charge the battery. When disharging is complete, detach the battery from the AC Power Adapter/Charger to store it.*
- *High temperatures can damage the battery pack, so use only where good ventilation is available. Do not allow it to discharge in container, such as a bag.*
- *If you stop recharging or discharging part way through, make sure to remove the battery pack before unplugging the adapter's AC cord.*
- *Remove the battery pack from the adapter immediately after discharging.*
- *To avoid interference with reception, do not use the AC Power Adapter/Charger near a radio.*
- *Make sure you unplug the DC cord before charging or discharging the battery pack.*
- *The CHARGE indicator may not light properly with a brand new battery pack, or with one that has been stored for an extended period. In this case, remove and reattach the battery pack and recharge it. The CHARGE indicator should blink during recharging. If not, contact your nearest JVC dealer.*


To DC IN jack
DC OUT terminal
To AC outlet
AC Power Adapter/Charger AA-V15EG
DC Cord
To car's cigarette lighter socket
Car Battery Charger/Adapter BH-V3E (optional)

USING AC POWER

Use the AC Power Adapter/Charger (connect as shown in the illustration on left).

NOTES:

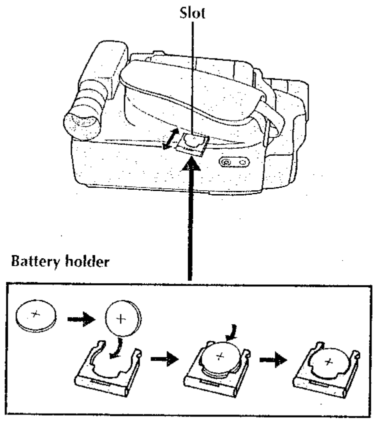
- *The provided AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.*
- *When using the DC cord, make sure you connect the end of the cord with the core filter to the camcorder. The core filter reduces interference.*

USING A CAR BATTERY

Use the optional Car Battery Charger/Adapter (connect as shown in the illustration on left).

NOTES:

- *When using the car battery, leave the engine idling.*
- *The optional Car Battery Charger/Adapter (BH-V3E) can also be used to charge the battery pack (other than BN-V20U/V856U).*
- *When using the optional Car Battery Charger/Adapter, refer to the respective instruction booklet.*



Clock (Lithium) Battery Insertion/Removal

This battery is necessary for clock operation and to perform date/time settings.

1 SWITCH OFF POWER

Switch off the unit's power.

2 REMOVE BATTERY HOLDER

Pull out the battery holder.

3 INSERT BATTERY IN HOLDER

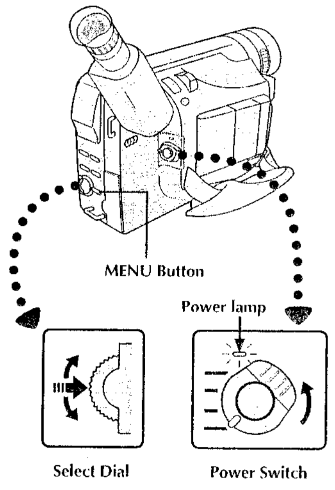
Insert the battery in the holder, and be sure to have the "+" mark visible.

4 RE-INSERT HOLDER

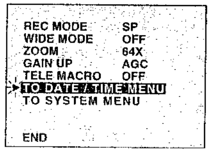
Slide the holder back into the slot until you hear a click.

NOTES:

- *See "SAFETY PRECAUTIONS" (☞ pg. 2) for information on safe handling of lithium batteries.*
- *To avoid losing the battery and/or battery holder, place the camcorder with the grip side up as shown in the illustration when inserting/removing the battery.*

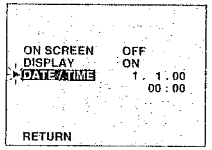


Display



Recording Menu

```
REC MODE          SP
WIDE MODE         OFF
ZOOM              64X
GAIN UP           AGC
TELE MACRO        OFF
TO DATE/TIME MENU
TO SYSTEM MENU

END
```



Date/Time Menu

```
ON SCREEN         OFF
DISPLAY           ON
DATE/TIME         1. 1.00
                  00:00

RETURN
```

Date/Time Settings

Date and time will automatically be recorded on tape at all times. It is your choice to display it or not during playback (☞ pg. 39).

1 SELECT OPERATION MODE

Set the Power Switch to "PRO.".

- The power lamp comes on and the camcorder is turned on.

2 ACCESS RECORDING MENU

Press **MENU**. The Recording Menu appears.

3 ACCESS DATE/TIME MENU

Move the highlight bar to "TO DATE/TIME MENU" by rotating the Select Dial. Press the Select Dial and the Date/Time Menu appears.

4 INPUT DATE AND TIME

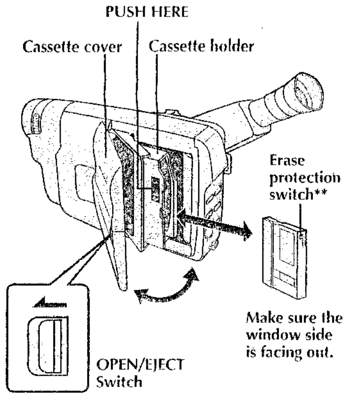
Move the highlight bar to "DATE/TIME" by rotating the Select Dial. Press the Select Dial and "day" is highlighted and begins blinking.

Rotating the Select Dial, input the day. Press the Select Dial. Repeat the procedure to input the month, year, hour and minute.

- Press the Select Dial twice when the highlight bar is set to "RETURN" to exit.

NOTE:

Even if you select "DATE/TIME", if the parameter is not highlighted the camcorder's internal clock continues to operate. Once you move the highlight bar to the first date/time parameter (day), the clock stops. When you finish setting the minute and press the Select Dial, the date and time begin operation from the date and time you just set.


PUSH HERE
Cassette cover
Cassette holder
Erase protection switch**
Make sure the window side is facing out.
OPEN/EJECT Switch

** *To protect valuable recordings . . .*

.... slide the erase protection switch on the back of the tape in the direction of "SAVE". This prevents this tape from being recorded over. If you decide later that you do want to record on this tape, slide the switch back to "REC" before loading the tape.

Loading/Unloading A Cassette

The camcorder needs to be powered up to load or eject a cassette.

1 OPEN CASSETTE COVER

Press **OPEN/EJECT** in the direction of the arrow then swing the cover open until it locks. The holder opens automatically.

- Do not touch internal components.

2 INSERT/REMOVE TAPE

Insert or remove a tape and press "PUSH HERE" to close the cassette holder.

- Once the cassette holder is closed, it recedes automatically. Wait until it recedes completely before closing the cassette cover.
- When the battery's charge is low, you may not be able to close the cover. Do not apply force. Replace the battery with a fully charged one before continuing.

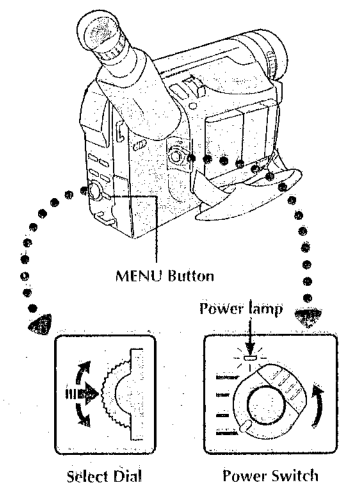
3 CLOSE CASSETTE COVER

Approximate recording time

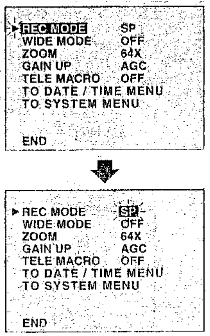
Tape	Recording mode	
	SP	LP
DVM-30	30 min.	45 min.
DVM-60	60 min.	90 min.

NOTES:

- *It takes a few seconds for the cassette holder to open. Do not apply force.*
- *If you wait a few seconds and the cassette holder does not open, close the cassette cover and try again. If the cassette holder still does not open, turn the camcorder off then on again.*
- *When the camcorder is suddenly moved from a cold place to a warm environment, wait a short time before opening the cover.*
- *Closing the cassette cover before the cassette holder comes out may cause damage to the camcorder.*
- *Even when the camcorder is switched off, a cassette can be loaded or unloaded. After the cassette holder is closed with the camcorder switched off, however, it may not recede. It is recommended to turn the power on before loading or unloading.*
- *When resuming recording, once you open the cassette cover a blank portion will be recorded on the tape or a previously recorded scene will be erased (recorded over) regardless of whether the cassette holder came out or not. See page 18 for information about recording from the middle of a tape.*



Display

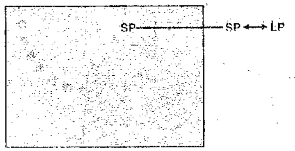


```
▶REC MODE       SP
 WIDE MODE      OFF
 ZOOM           64X
 GAIN UP        AGC
 TELE MACRO     OFF
 TO DATE / TIME MENU
 TO SYSTEM MENU

 END
```

```
▶REC MODE       SP
 WIDE MODE      OFF
 ZOOM           64X
 GAIN UP        AGC
 TELE MACRO     OFF
 TO DATE / TIME MENU
 TO SYSTEM MENU

 END
```

Recording Menu

Recording mode indicator



Recording Mode Setting

Set depending on your preference.

1 SELECT OPERATION MODE

Set the Power Switch to "PRO.".

- The power lamp comes on and the camcorder is turned on.

2 ACCESS RECORDING MENU

Press **MENU**. The Recording Menu appears.

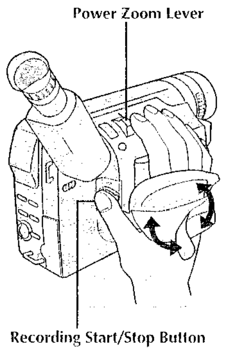
3 SET RECORDING MODE

First move the highlight bar to "REC MODE" by rotating the Select Dial. Press the Select Dial and the parameter "SP" or "LP" is highlighted. Select "SP" or "LP" by rotating the Select Dial. Press the Select Dial twice to exit from the Recording Menu.

- "LP" (Long Play) is more economical, providing 1.5 times the recording time.
- Audio Dubbing is impossible on a tape recorded in the LP mode.

NOTES:

- *If the recording mode is switched during recording, the playback picture will be blurred at the switching point.*
- *It is recommended that tapes recorded in the LP mode on this camcorder be played back on this camcorder.*
- *During playback of a tape recorded on another camcorder, blocks of noise may appear or there may be momentary pauses in the sound.*

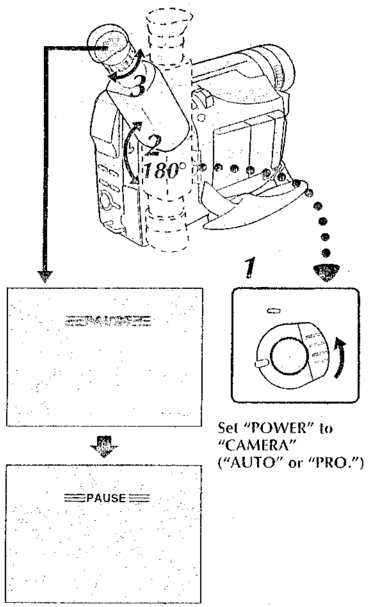


Grip Adjustment

1 EXPAND LOOP
Separate the Velcro strip.

2 INSERT HAND
Pass your right hand through the loop and grasp the grip.

3 ADJUST STRAP LENGTH
Adjust so that your thumb and fingers can easily operate the Recording Start/Stop Button and Power Zoom Lever. Refasten the Velcro strip.



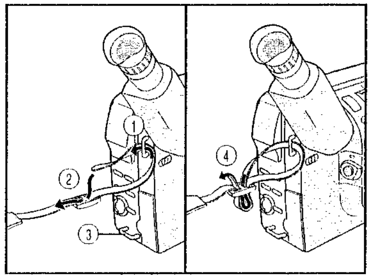
Set "POWER" to "CAMERA" ("AUTO" or "PRO.")

Viewfinder Adjustment

1 SELECT OPERATION MODE
Set the Power Switch to "CAMERA" ("AUTO" or "PRO.").

2 POSITION VIEWFINDER
Adjust the viewfinder manually for best viewability (see illustration on left).

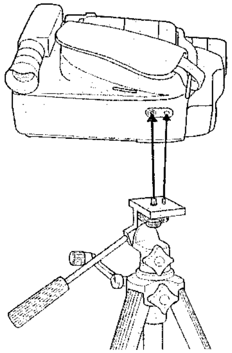
3 ADJUST DIOPTRE
Turn the Dioptre Adjustment Control until the indications in the viewfinder are clearly focused.



Shoulder Strap Attachment

1 ATTACH STRAP
Following the illustration on left, thread the strap through the top of the eyelet ①, then fold it back and thread it through the buckle ②. Repeat the procedure to attach the other end of the strap to the other eyelet ③, making sure the strap is not twisted.

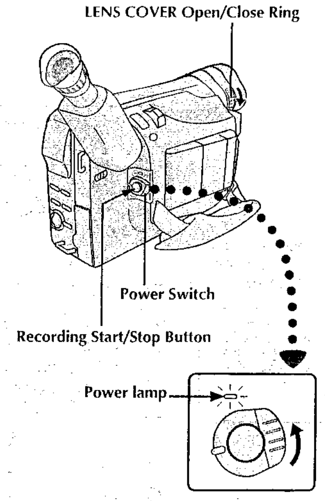
2 ADJUST LENGTH
Adjust as shown in the illustration on left ④.

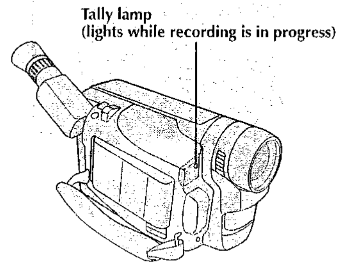


Tripod Mounting

1 ALIGN AND TIGHTEN
Align the screw and camera direction stud on the tripod with the camera's mounting socket and stud hole. Then tighten the screw.

CAUTION:
When using a tripod, be sure to open and extend its legs fully to stabilize the camcorder. To prevent damage to the unit caused by falling over, do not use a small-sized tripod.





NOTE:

You should already have performed the procedures listed below. If not, do so before continuing.

- *Power (☞ pg. 6)*
- *Recording Mode Setting (☞ pg. 11)*
- *Grip Adjustment (☞ pg. 12)*
- *Viewfinder Adjustment (☞ pg. 12)*

1 LOAD A CASSETTE

Press **OPEN/EJECT** in the direction of the arrow printed on it, then swing the cassette cover open until it locks. The holder opens automatically.
Insert a tape and press "PUSH HERE" to close the cassette holder.

- Once the cassette holder is closed, it recedes automatically. Wait until it recedes completely before closing the cassette cover.

2 ENTER RECORD-STANDBY MODE

Turn the **LENS COVER** Open/Close Ring to open the lens cover, then set the Power Switch to "CAMERA" ("AUTO" or "PRO.").

- The power lamp lights and the camcorder enters the Record-Standby mode.
- The scene you are aimed at appears on the viewfinder screen, with the word "PAUSE" superimposed upon it.

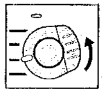
3 START SHOOTING

Press the Recording Start/Stop Button.

- "REC ▶▶▶" appears in the viewfinder while recording is in progress.

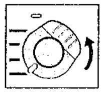
Power Switch Position

According to the Power Switch position you have selected, the following functions are available:



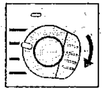
AUTO (Full Auto mode):

Allows you to record using NO special effects or manual adjustments. Suitable for standard recording. When set to this mode, "F.AUTO" appears.



PRO. (PRO. mode):

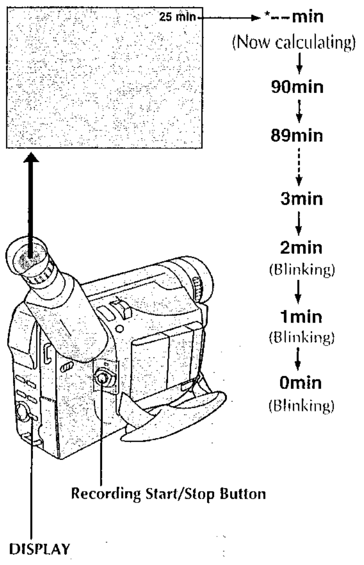
Allows you to set various recording functions using the menus. If you want more creative capabilities than full auto recording, try this mode. When set to this mode, "PRO." appears.



POWER OFF:

Allows you to switch off the camcorder. After setting to this position, Manual Focus and Exposure Control are automatically reset to "AUTO".

Tape remaining time indicator



4 STOP RECORDING

Press the Recording Start/Stop Button again to stop recording.

- The camcorder re-enters the Record-Standby mode.

NOTES:

- *The cassette holder cannot be opened unless a power supply is attached.*
- *There may be a delay after you open the cassette cover until the holder opens. Do not use force.*
- *The tape remaining time is only displayed in the viewfinder as shown.*
- *The remaining time indicated in the viewfinder is approximate.*
- *The time required to calculate the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette whose tape is already at its end is loaded.*
- *If the Record-Standby mode continues for 5 minutes, the camcorder's power shuts off automatically. Set the Power Switch to "POWER OFF", and then back to "CAMERA" to turn the camcorder on again.*
- *When a blank portion is left between recorded scenes on the tape, the time code is interrupted and errors may occur when editing the tape. Continue recording from where you stop so that there are no gaps by following "Recording from the middle of a tape" (☞ pg. 18).*
- *The LENS COVER warning blinks for about 5 seconds when the camcorder is turned on with the cover closed.*

Viewfinder Indications

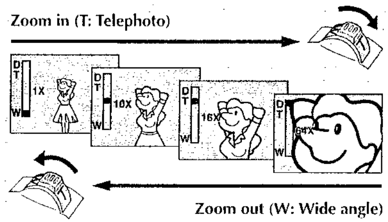
You can make the Viewfinder indications appear/disappear.

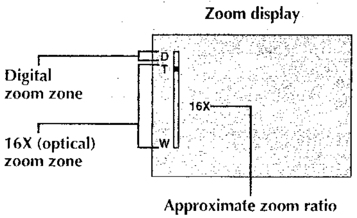
1 PRESS DISPLAY BUTTON

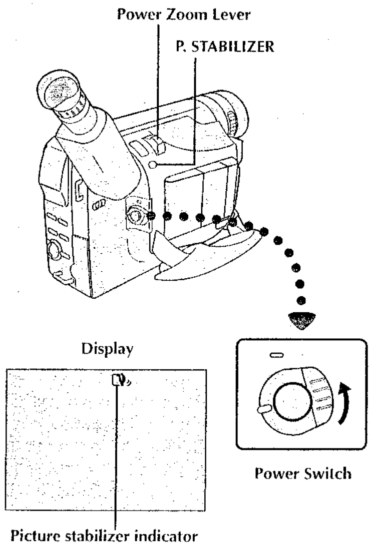
When you do not want the indications to appear, press **DISPLAY** for longer than approximately 1 second. Certain indications disappear.
Press again for longer than approx. 1 second to make the indicaitons reappear.

NOTE:

It is impossible to make the tape running indicator "▶▶▶" and warnings etc. disappear from the viewfinder. For the indications that can be removed, ☞ pg. 64 and 65.







FEATURE: Zooming

PURPOSE:

To produce the zoom in/out effect, or an instantaneous change in image magnification.

OPERATION:

Zoom In

Push the Power Zoom Lever towards "T".

Zoom Out

Push the Power Zoom Lever towards "W".

- The quicker you push the Power Zoom Lever, the quicker the zoom action.

NOTES:

- *Focusing may become unstable during Zooming. In this case, set the zoom while in Record-Standby, lock the focus by using the manual focus (☞ pg. 31), then zoom in or out in Record mode.*
- *In Full Auto mode (when the Power Switch is set to "AUTO"), zoom magnification of up to 64X is possible. In Pro. mode (when the Power Switch is set to "PRO."), zooming is possible to a maximum of 160X or can be switched to 16X magnification offered by optical zoom.*
- *Zoom magnification of over 16X is done through Digital image processing, and is therefore called Digital Zoom.*
- *During Digital zoom, the quality of image may suffer.*
- *Digital zoom cannot be used while functions done through Digital image processing (Picture Wipe/ Dissolve function, ☞ pg. 26, Snapshot, ☞ pg. 20, etc.) are activated.*
- *Macro shooting (as close as approx. 1.5 cm to the subject) is possible when the Power Zoom Lever is set all the way to "W".*

FEATURE: Picture Stabilizer

PURPOSE:

To compensate for unstable images caused by camera-shake, particularly at high magnification.

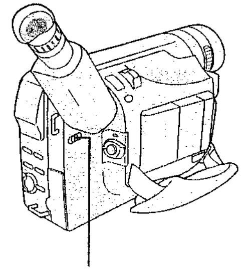
OPERATION:

1) Press **P. STABILIZER**. "✋"appears.

- To switch off the Picture Stabilizer, press **P. STABILIZER**. The indicator disappears.

NOTES:

- *Accurate stabilization may not be possible if hand shake is excessive, or under the following conditions:*
  - *When shooting subjects with vertical or horizontal stripes.*
  - *When shooting dark or dim subjects.*
  - *When shooting subjects with excessive backlighting.*
  - *When shooting scenes with movement in various directions.*
  - *When shooting scenes with low-contrast backgrounds.*
- *Switch off the Picture Stabilizer when recording with the camcorder on a tripod.*
- *The "✋" indicator appears blinking if the Stabilizer cannot be used.*



DANGER

- The video light can become extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot for some time.
- When operating, keep a distance of about 30 cm. between the video light and people or objects.
- Do not use near flammable or explosive materials.
- It is recommended that you consult your nearest JVC dealer for replacing the video light.

FEATURE: Video Light

PURPOSE:

To brighten the scene when natural lighting is too dim.

OPERATION:

1) Set the **LIGHT OFF/AUTO/ON** Switch as required:

OFF	: Turns off the light.
AUTO	: Automatically turns on the light when the camcorder senses insufficient lighting on the subject.
ON	: Always keeps the light on as long as the camcorder is turned on.

- The video light can only be used with the camcorder's power on.
- It is recommended to set the white balance (☞ pg. 34) to ☀ when you use the video light.
- When not using the video light, turn it off to save battery power.

NOTES:

- *Even if the battery indicator (▭) does not blink if the battery pack's charge is low, the camcorder may turn off automatically when you turn on the video light, or when you start recording with the video light turned on.*
- *When the **LIGHT OFF/AUTO/ON** Switch is set to "AUTO":*
  - *Depending on the lighting conditions, the video light may keep turning on and off. In this case, manually switch the light on or off using the **LIGHT OFF/AUTO/ON** switch.*
  - *While the "SHUTTER" mode (☞ pg. 29) is engaged, the light is likely to stay on.*
  - *While the "TWILIGHT" mode (☞ pg. 29) is engaged, the light will not activate.*

NOTE: Recording From The Middle Of A Tape

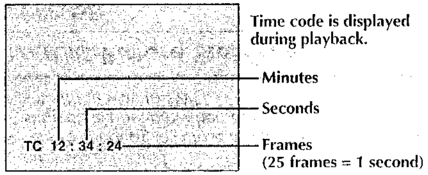
Time Code

During recording, a time code is recorded on the tape. This code is to confirm the location of the recorded scene on the tape during playback.
If recording starts from a blank portion, the time code begins counting from "00:00:00" (minute:second:frame). If recording starts from the end of a previously recorded scene, the time code continues from the last time code number.

To perform Random Assemble Editing (☞ pg. 48 – 53), time code is necessary. If during recording a blank portion is recorded partway through the tape, the time code is interrupted. When recording is resumed, the time code starts counting up again from "00:00:00". This means the camcorder may record the same time codes as those existing in a previously recorded scene. To prevent leaving a blank portion on a tape, perform the procedure in "Recording From The Middle of A Tape" (see below) in the following cases;

- After playing back the recorded tape, when you shoot again.
- When power shuts off during shooting.
- When a tape is removed and re-inserted during shooting.
- When shooting using a partially recorded tape.
- When shooting on a blank portion located partway through the tape.
- When shooting again after already shooting a scene and opening/closing the cassette cover.

Display


TC 12 : 34 : 24
Time code is displayed during playback.
Minutes
Seconds
Frames
(25 frames = 1 second)

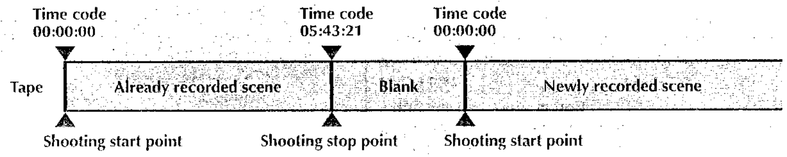
Recording From The Middle Of A Tape

1. Play back a tape to find the spot at which you want to start recording, then engage the Still Playback mode (☞ pg. 37).
2. Set the Power Switch to "CAMERA" ("AUTO" or "PRO.") and start recording.

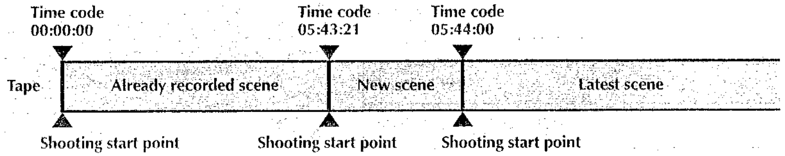
NOTES:

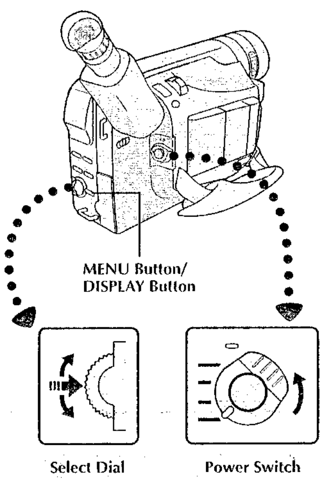
- *The Time Code cannot be reset.*
- *During fast-forwarding and rewinding, time code indication does not move smoothly.*

When blank portion is recorded on a tape

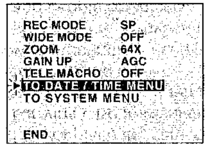

Time code
00:00:00
Time code
05:43:21
Time code
00:00:00
Tape
Already recorded scene
Blank
Newly recorded scene
Shooting start point
Shooting stop point
Shooting start point

Proper recording

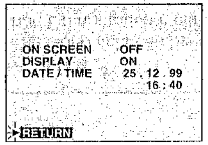

Time code
00:00:00
Time code
05:43:21
Time code
05:44:00
Tape
Already recorded scene
New scene
Latest scene
Shooting start point
Shooting start point
Shooting start point


MENU Button/
DISPLAY Button
Select Dial
Power Switch

Display


Recording Menu

```
REC MODE        SP
WIDE MODE       OFF
ZOOM            64X
GAIN UP         AGC
TELE MACRO      OFF
▶TO DATE / TIME MENU
TO SYSTEM MENU

END
```


Date/Time Menu

```
ON SCREEN       OFF
DISPLAY         ON
DATE / TIME      25 . 12 . 99
                      16 : 40

▶RETURN
```

Displaying The Date And Time During Recording

When the Power Switch is set to "PRO.", you can choose whether to display the date and time during recording or not. You must first set the date and time ("Date/Time Settings", ☞ pg. 9). Set "DISPLAY" to "ON" in the Date/Time Menu. The Date/Time is always displayed when the Power Switch is set to "AUTO".

1 **SELECT OPERATION MODE**
Set the Power Switch to "PRO.".

2 **ACCESS RECORDING MENU**
Press **MENU**. The Recording Menu appears.

3 **ACCESS DATE/TIME MENU**
Move the highlight bar to "TO DATE/TIME MENU" by rotating the Select Dial. Press it and the Date/Time Menu appears.

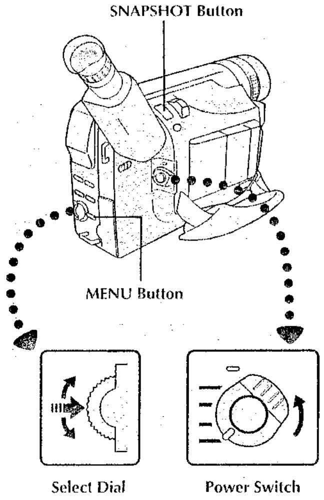
4 **SELECT FUNCTION**
Move the highlight bar to "DISPLAY" by rotating the Select Dial, then press it.

5 **SET FUNCTION PARAMETERS**
Cycle through the available settings of the selected functions by rotating the Select Dial and stop when the one you want is displayed. Then press it and the highlight bar automatically moves to "RETURN".

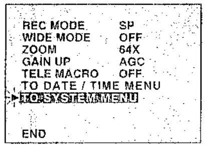
6 **CLOSE RECORDING MENU**
Press the Select Dial twice. Selection is complete and the menu disappears.

NOTES:

- *Connect the camcorder to a TV and set "ON SCREEN" to "ON" in the Date/Time Menu. The display appears on the connected TV.*
- *The Indicator/Display function overrides these settings. Even if you have set "ON SCREEN" to "ON", pressing **DISPLAY** for longer than 1 second removes the indications from the screen. Pressing it for longer than 1 second again makes the indications re-appear ("Viewfinder Indications", ☞ pg. 15).*



Display



REC MODE	SP
WIDE MODE	OFF
ZOOM	64X
GAIN UP	AGC
TELE MACRO	OFF
TO DATE / TIME MENU	
TO SYSTEM MENU	
END	

Recording Menu

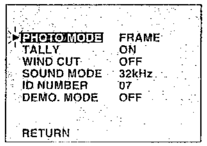
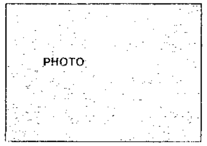


PHOTO MODE	FRAME
TALLY	ON
WIND CUT	OFF
SOUND MODE	32kHz
ID NUMBER	07
DEMO. MODE	OFF
RETURN	

System Menu



PHOTO

During snapshot

Snapshot

Use your camcorder like a regular camera and take a snapshot, or several of them in succession.

SNAPSHOT MODE SELECTION

1 SELECT OPERATION MODE
Set the Power Switch to "PRO.".

2 ACCESS RECORDING MENU
Press **MENU**. The Recording Menu appears.

3 ACCESS SYSTEM MENU
Move the highlight bar to "TO SYSTEM MENU" by rotating the Select Dial. Press it and the System Menu appears.

4 SELECT SNAPSHOT MODE
Move the highlight bar to "PHOTO MODE" by rotating the Select Dial. Press it and choose the appropriate mode among the five Snapshot modes (☞ pg. 21) by rotating it. Stop when the one you want is displayed and press it again. The highlight bar automatically moves to "RETURN". Press the Select Dial twice. Selection is complete and the menu disappears.

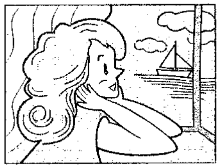
SNAPSHOT RECORDING

1 TAKE SNAPSHOT
Press **SNAPSHOT**.

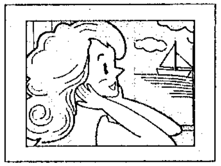
- Regardless of the Power Switch position ("AUTO" or "PRO."), Snapshot recording takes place using the selected Snapshot mode.

If you press during Record-Standby . . .
.... "PHOTO" appears and a still image will be recorded for approx. 6 seconds, then the camcorder re-enters the Record-Standby mode.

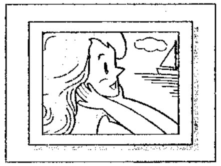
If you press during Recording . . .
.... "PHOTO" appears and a still image will be recorded for approx. 6 seconds, then the normal recording resumes.



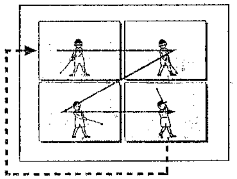
□
FULL*
(Snapshot mode with no frame)



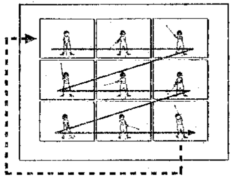
□
FRAME*
(Snapshot mode with frame)



□
PIN-UP
(Pin-Up mode)



⊞
MULTI 4
(Multi-Analyzer 4)



▦
MULTI 9
(Multi Analyzer 9)

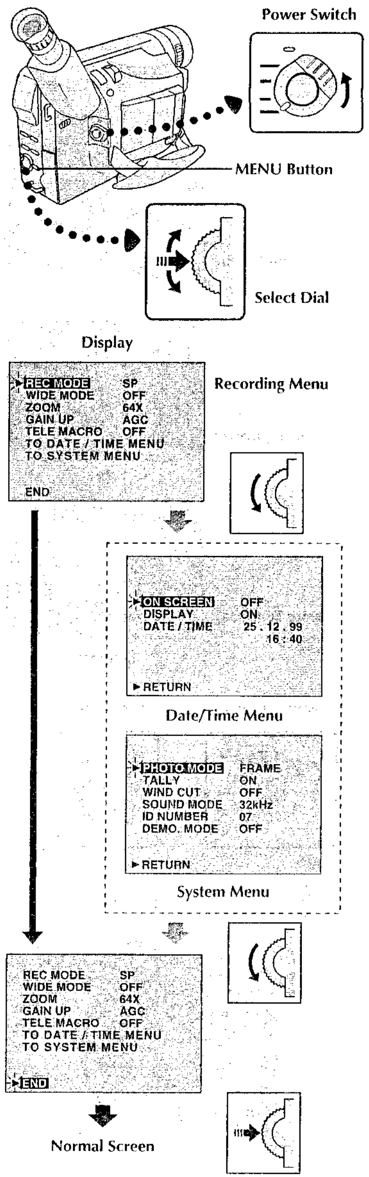
* : There is a momentary camera shutter-type blackout together with the sound effect of a shutter closing, which is recorded together with the image.

Motor Drive Mode

Keeping **SNAPSHOT** pressed provides an effect similar to serial photography. (The interval between the still pictures: approx. 0.7 seconds.)

NOTES:

- *In Full Auto mode, all Snapshot modes are available. However, the Snapshot mode cannot be changed.*
- *During playback as well, all Snapshot modes are available. The shutter sound is not heard.*
- *However, during playback, "MULTI 4" and "MULTI 9" are not available when the "MONOTONE" or "SEPIA" playback effect (☞ pg. 47) is selected.*
- *The Snapshot mode (except FULL mode) is not possible while Digital Zoom (zoom magnification of over 16X, ☞ pg. 23) is activated.*
- *If certain modes of Programme AE with special effects (☞ pg. 28) are activated, some Snapshot modes cannot be used. If you select a Snapshot mode that is unusable in the current situation, the "PHOTO" indication blinks when you press **SNAPSHOT**.*



Recording Menu

```
▶REC MODE        SP
 WIDE MODE       OFF
 ZOOM            64X
 GAIN UP         AGC
 TELE MACRO      OFF
 TO DATE / TIME MENU
 TO SYSTEM MENU

 END
```

Date/Time Menu

```
▶ON SCREEN       OFF
 DISPLAY         ON
 DATE / TIME     25 . 12 . 99
                      16 : 40

▶RETURN
```

System Menu

```
▶PHOTO MODE      FRAME
 TALLY           ON
 WIND CUT        OFF
 SOUND MODE      32kHz
 ID NUMBER       07
 DEMO. MODE      OFF

▶RETURN
```

```
 REC MODE        SP
 WIDE MODE       OFF
 ZOOM            64X
 GAIN UP         AGC
 TELE MACRO      OFF
 TO DATE / TIME MENU
 TO SYSTEM MENU

▶END
```

Normal Screen

Using Menu For Detailed Adjustment

This camcorder is equipped with an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings.

1 ACCESS RECORDING MENU

Set the Power Switch to "PRO.", then press **MENU**. The Recording Menu appears.

2 SELECT FUNCTION

Rotate the Select Dial to move the highlight bar to the desired function.

- If the setting you want cannot be found in the Menu Screen, place the highlight bar on "END", then go to step **6**.

3 MAKE SETTING

Press the Select Dial. The setting procedure depends on the function you select.

If you select "REC MODE", "WIDE MODE", "ZOOM", "GAIN UP" or "TELE MACRO" . . .

.... each function's parameter starts blinking. Rotate the Select Dial until the desired parameter appears. Go to step **5**.

If you select "TO DATE/TIME MENU" . . .

.... the Date/Time Menu appears. Go to step **4**.

If you select "TO SYSTEM MENU" . . .

.... the System Menu appears. Go to step **4**.

4 SELECT FUNCTION PARAMETERS IN DATE/TIME MENU OR SYSTEM MENU

Rotate the Select Dial to move the highlight bar to the desired function, then press it.

If you select "DATE/TIME" . . . ☞ pg. 9

If you select other functions . . .

.... rotate the Select Dial until the desired parameter appears, then press it. The highlight bar automatically moves to "RETURN". Go to step **5**.

5 END SETTING

Press the Select Dial. The Recording Menu reappears and the highlight bar is on "END".

6 CLOSE MENU SCREEN

Press the Select Dial. The normal screen reappears.

Recording Menu Explanations

REC MODE	Allows you to set the recording mode (SP or LP) depending on your preference (☞ pg. 11).	
WIDE MODE	**OFF**	Select "OFF" when you want to use neither "SQUEEZE" nor "CINEMA".
	SQUEEZE	For playback on TVs with an aspect ratio of 16:9. Naturally expands the image to fit the screen without distortion. W appears. When using this mode, refer to your wide-screen TV's instruction manual. During playback/recording on 4:3 TVs/ viewfinder, the image is elongated vertically.
	CINEMA	Inserts black bands at the top and bottom of the screen. During playback on wide-screen TVs, the black bands at the top and bottom of the screen are cut and the screen ratio becomes 16:9. When using this mode, refer to your wide-screen TV's instruction manual. During playback/recording on 4:3 TVs/viewfinder, black bands are inserted at the top and bottom of the screen and the image appears like a letterboxed 16:9 movie.
ZOOM	**16X**	When set to "16X" while using digital zoom, the zoom magnification will reset to 16X since digital zoom will be disengaged.
	64X	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 16 times (the optical zoom limit), to a maximum of 64 times digital magnification.
	160X	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 16 times (the optical zoom limit), to a maximum of 160 times digital magnification.
GAIN UP	**AGC**	This is automatically activated during Full Auto mode. The overall appearance is jagged, but the image is bright.
	AUTO A✳	The shutter speed is automatically adjusted (1/25 — 1/200 sec.). Shooting a subject in low or poor lighting at 1/25 sec. shutter speed provides a brighter image than in the AGC mode, but the subject's movements are not smooth or natural. When set to this mode, "**A✳**" is displayed.
	OFF	Allows you to shoot dark scenes with no picture brightness adjustment.
TELE MACRO	**OFF** **ON**	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance more than 1m to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm. • Depending on the zoom position, the lens may go out of focus.
TO DATE/TIME MENU		Refer to "Date/Time Menu Explanations" (☞ pg. 24).
TO SYSTEM MENU		Refer to "System Menu Explanations" (☞ pg. 24).

▨ : **Factory-preset**

Date/Time Menu Explanations

ON SCREEN	OFF	Keeps the camcorder's display from appearing on the connected TV screen.
	ON	Makes the camcorder's display appear on screen when the camcorder is connected to a TV.
DISPLAY	ON	Makes the date/time settings appear in the camcorder (☞ pg. 19).
	OFF	Keeps the date/time settings from appearing in the camcorder.
DATE/TIME	Allows you to set the current date and time (☞ pg. 9).	

System Menu Explanations

PHOTO MODE	Allows you to set the parameters for "FULL", "FRAME", "PIN-UP", "MULTI 4" and "MULTI 9" recording (☞ pg. 20).	
TALLY	ON	The tally lamp comes on to signal the start of recording.
	OFF	The tally lamp remains off at all times.
WIND CUT	OFF	Disengages the function which cuts down on noise created by wind.
	ON	Helps cut down on noise created by wind. • "🌬" appears. • The quality of the sound will change. This is normal.
SOUND MODE	32 kHz	Enables recording of stereo sound on four separate channels, and is recommended for use when performing audio dubbing.
	48 kHz	Enables recording of stereo sound on two separate channels.
ID NUMBER	This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). The numbers range from 01 to 99. Factory setting is 07.	
DEMO. MODE	OFF	Automatic demonstration will not take place.
	ON	Demonstrates certain functions such as Programme AE with special effects, etc., and can be used to confirm how these functions operate. When "DEMO. MODE" is set to "ON" and the Recording Menu is closed, demonstration starts. **NOTES:** ● *If a tape is in the camcorder, the demonstration cannot be turned on.* ● *By turning off the camcorder, "DEMO. MODE" is set to "OFF" automatically.*

☐ : Factory-preset

Fade/Wipe Effects

These effects let you make pro-style scene transitions. Use these to spice up the transition from one scene to the next. You can also vary transitions from scene to scene.

EFFECT SELECTION

1 ACCESS MANUAL MODE ITEM MENU

Set the Power Switch to "PRO.", then press the Select Dial.

2 ACCESS FADER/WIPE MENU

Rotate the Select Dial to move the highlight bar to "FADER/WIPE", then press it.

3 SELECT EFFECT

Rotate the Select Dial to move the highlight bar to the desired function, then press it.

- The Fade/Wipe Menu disappears and the effect is reserved. The indicator representing the selected effect appears.

FADE/WIPE SELECTION (WH, BK, ▦, B.W, ◣, □, ◂, ◂▸, ▴, ▴▾ and ?R)

A scene gradually appears on a black, white, or black-and-white screen or mosaic pattern (Fade-in or Wipe-in); or disappears, leaving a black, white, or black-and-white screen or mosaic pattern (Fade-out or Wipe-out).

Fade or Wipe works when recording is started or when you stop recording.

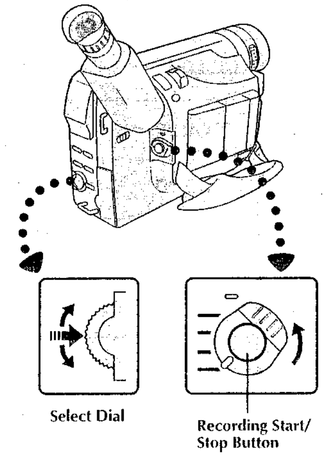
Before the following step, perform the above steps 1 through 3.

4 START OR END RECORDING

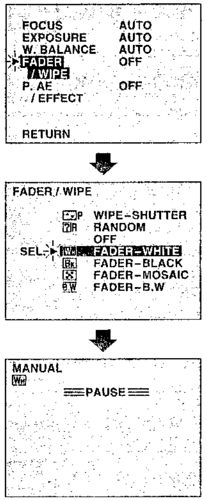
Press the Recording Start/Stop Button to activate Fade-in/out or Wipe-in/out.

NOTE:

☞ *pg. 26.*

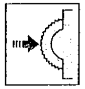


Display



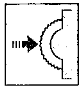
```
FOCUS          AUTO
EXPOSURE       AUTO
W. BALANCE     AUTO
FADER          OFF
 / WIPE
P. AE          OFF
 / EFFECT

RETURN
```

Manual Mode Item Menu



```
FADER / WIPE

         ?P   WIPE-SHUTTER
         ?R   RANDOM
              OFF
SEL.▶    WH   FADER-WHITE
         BK   FADER-BLACK
         ▦    FADER-MOSAIC
         B.W  FADER-B.W
```

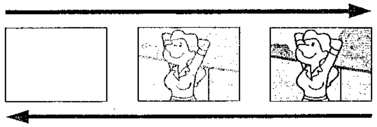
Fader/Wipe Menu



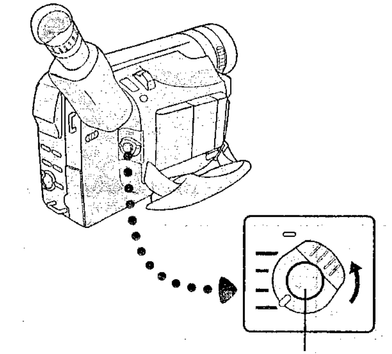
```
MANUAL
WH
      ══PAUSE══
```

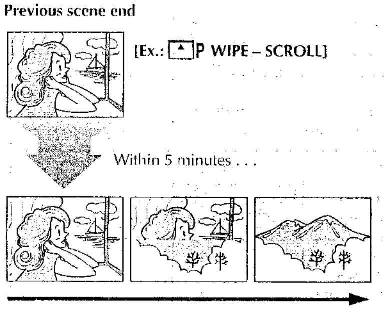
[Ex.: WH FADER – WHITE]

Fade-in



Fade-out





PICTURE WIPE OR DISSOLVE SELECTION (⧉P, ◣P, □P, ◂P, ◂▸P, ▴P and ▴▾P)

Combine the Picture Wipe and Dissolve functions for a professional transition effect. There are 6 Picture Wipe effects and 1 Dissolve effect. The Picture Wipe or Dissolve works when recording is started.

Before the following steps, perform steps 1 through 3 on pg. 25.

4 STORE SCENE IN MEMORY

Engage the Record-Standby mode.

If you select Picture Wipe/Dissolve during recording . . .

.... press the Recording Start/Stop Button when one scene is finished. The point at which the scene ended is stored in memory.

If you select Picture Wipe/Dissolve during Record-Standby mode . . .

.... press the Recording Start/Stop Button to start recording and press it again when one scene is finished. The point at which the scene ended is stored in memory.

If you select Picture Wipe/Dissolve during Record-Standby mode after performing a Picture Wipe/ Dissolve . . .

.... the point at which the scene ended is already stored in memory.

5 START RECORDING

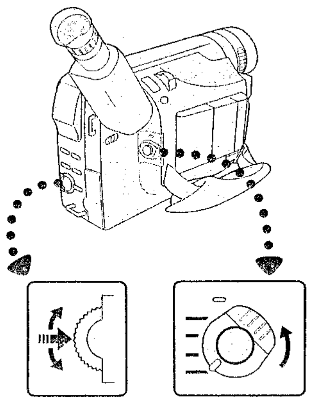
If you start recording a new scene within 5 minutes of the end of the previous recording (without having turned the camcorder's power off), the previous scene wipes out, revealing the new scene.

NOTES:

- *You can extend the length of a Fade or Wipe by pressing and holding the Recording Start/Stop Button.*
- *If the power is turned off after a scene is finished recording, the stored point is erased.*
  This disables the Picture Wipe/Dissolve combination. When this happens, the Picture Wipe/Dissolve indicator blinks. Try recording again, but do not turn the power off when you are finished. Please be advised that power also shuts off automatically if 5 minutes elapse in the Record-Standby mode.
- *The sound at the end of the last recorded scene is not stored.*

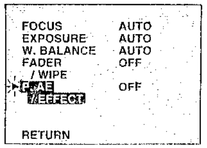
Fader And Wipe Menu

Menu	Effect
WH FADER — WHITE	Fade in or out with a white screen.
BK FADER — BLACK	Fade in or out with a black screen.
▦ FADER — MOSAIC	Fade in or out with a full-screen mosaic effect.
B.W FADER — B.W	Fade in to a colour screen from a black and white screen, or fade out from colour to black and white.
◣ WIPE — CORNER	Wipe in on a black screen from the upper right to the lower left corner, or wipe out from lower left to upper right, leaving a black screen.
□ WIPE — WINDOW	The scene starts in the centre of a black screen and wipes in towards the corners, or comes in from the corners, gradually wiping out to the centre.
◂ WIPE — SLIDE	Wipe in from right to left, or wipe out from left to right.
◂▸ WIPE — DOOR	Wipe in as the two halves of a black screen open to the left and right, revealing the scene, or wipe out and the black screen reappears from left and right to cover the scene.
▴ WIPE — SCROLL	The scene wipes in from the bottom to the top of a black screen, or wipes out from top to bottom, leaving a black screen.
▴▾ WIPE — SHUTTER	Wipe in towards the centre of a black screen from the top and bottom, or wipe out from the centre towards the top and bottom, leaving a black screen.
⧉P DISSOLVE	The new scene gradually appears as the old one gradually disappears.
◣P WIPE — CORNER	The new scene wipes in over the previous one from the upper right corner to the lower left corner.
□P WIPE — WINDOW	The next scene gradually wipes in from the centre of the screen towards the corners, covering the previous scene.
◂P WIPE — SLIDE	The next scene gradually wipes in over the previous one from right to left.
◂▸P WIPE — DOOR	The previous scene wipes out from the centre to the right and left, like a door being pushed open to reveal the next scene.
▴P WIPE — SCROLL	The new scene wipes in over the last one from the bottom of the screen to the top.
▴▾P WIPE — SHUTTER	The new scene wipes in over the previous one from the centre towards the top and bottom of the screen.
?R RANDOM	When this function is activated, the camcorder randomly selects the effect used in scene transition (from WH, BK, □, ▴, ▴▾, ◂, ◂▸ and ◣). The Picture Wipe/Dissolve function is not available.



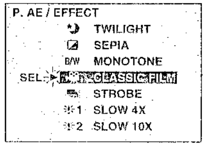
Select Dial Power Switch

Display



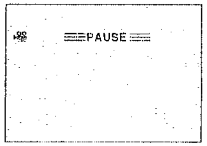
FOCUS AUTO
EXPOSURE AUTO
W. BALANCE AUTO
FADER / WIPE OFF
P.AE /EFFECT OFF
RETURN

Manual Mode Item Menu



P. AE / EFFECT
TWILIGHT
SEPIA
B/W MONOTONE
SEL. CLASSIC FILM
STROBE
1 SLOW 4X
2 SLOW 10X

P.AE/EFFECT Menu



The indicator for the selected mode appears, and the selected mode is engaged.

Programme AE With Special Effects

IMPORTANT:

If certain Fades or Wipes (☞ pg. 27) are activated, some modes of Programme AE with special effects cannot be used. If you select a mode that is unusable in the current situation, the mode's symbol blinks.

You can choose any one of the effects from the P.AE/ EFFECT Menu.

1 SELECT OPERATION MODE
Set the Power Switch to "PRO.".

2 ACCESS MANUAL MODE ITEM MENU
Press the Select Dial and move the highlight bar to "P.AE/EFFECT" by rotating the Select Dial.

3 ACCESS P.AE/EFFECT SELECT MENU
Press the Select Dial. The P.AE/EFFECT Menu appears.

4 SELECT MODE
Move the highlight bar to the desired mode by rotating the Select Dial, then press it.

- The P.AE/EFFECT Menu disappears and the selected mode is activated. The symbol of the selected mode appears.

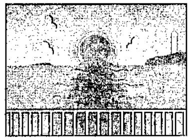
5 DISABLE MODE
To turn off the selected mode, re-access the P.AE/ EFFECT Menu and move the highlight bar to "OFF" by rotating the Select Dial. Then press it.

NOTE:

Programme AE with special effects can be changed during recording or during Record-Standby.

SHUTTER (Variable Shutter Speed)

1/50–The shutter speed is fixed at 1/50th of a second. Black bands that usually appear when shooting a TV screen become narrower.
1/100–The shutter speed is fixed at 1/100th of a second. The flickering that occurs when shooting under a fluorescent light or mercury-vapour lamp is reduced.
1/250, 1/500–These settings allow fast-moving images to be captured one frame at a time, for vivid, stable slow-motion playback. The faster the shutter speed, the darker the picture becomes. Use the shutter function under good lighting conditions.



TWILIGHT

Makes evening scenes look more natural. White Balance (☞ pg. 34) is initially set to ☀, but can be changed to your desired setting. When Twilight is chosen, the camcorder automatically adjusts the focus from approx. 10 m to infinity. From less than 10 m, adjust the focus manually.

SEPIA

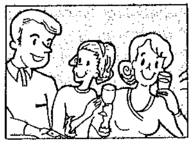
Recorded scenes have a brownish tint like old photos. Combine this with the Cinema mode for a classic look.

B/W MONOTONE

Like classic black and white films, your footage is shot in B/W. Used together with the Cinema mode, it enhances the "classic film" effect.

CLASSIC FILM

Gives recorded scenes a strobe effect.



STROBE

Your recording looks like a series of consecutive snapshots.

SLOW (Slow Shutter)

You can light dark subjects or areas even brighter than they would be under good natural lighting.

1 SLOW 4X

The Shutter Speed is set to 1/12.5th of a second to quadruple the sensitivity.

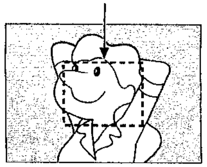
2 SLOW 10X

The Shutter Speed is set to 1/5th of a second to provide 10 times the sensitivity.

NOTES:

- *When using "SLOW", the image takes on a strobe-like effect.*
- *Use "SLOW" only in dark areas.*
- *The Manual Focus indication may appear and flash when "SLOW" is in use.*
- *If the image is out of focus, adjust manually. It is also recommended that you use a tripod, if possible.*

Focus detection zone



Focusing

AUTO FOCUS

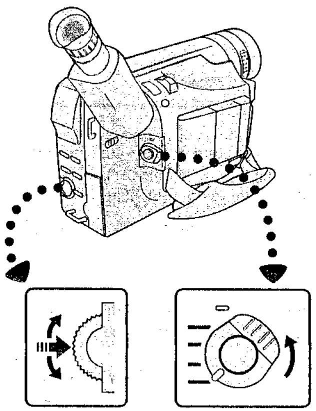
The camcorder's Full Range AF system offers continuous shooting ability from close-up (as close as approx. 1.5 cm to the subject) to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):

- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

* The following low-contrast warnings appear blinking: ⛰, ▲, ▼ and 👤

NOTES:

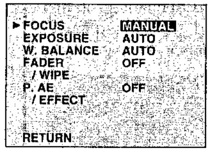
- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom-out first (☞ pg. 16). If zoomed-in in the auto focus mode, the camcorder could automatically zoom out depending on the distance between the camcorder and the subject. When "TELE MACRO" (☞ pg. 23) is activated, the camcorder will not zoom out automatically.*



Select Dial

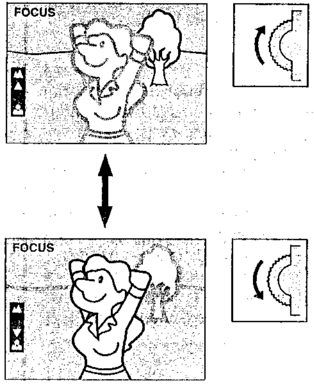
Power Switch

Display



```
▶FOCUS        MANUAL
 EXPOSURE     AUTO
 W. BALANCE   AUTO
 FADER        OFF
  / WIPE
 P. AE        OFF
  / EFFECT

 RETURN
```

Manual Mode Item Menu



MANUAL FOCUS

NOTE:

You should already have made the necessary viewfinder adjustments (☞ pg. 12). If you have not, do so before continuing.

1 SELECT OPERATION MODE

Set the Power Switch to "PRO.".

2 ACCESS MANUAL MODE ITEM MENU

Press the Select Dial. The Manual Mode Item Menu appears.

3 ACCESS MANUAL FOCUS

Move the highlight bar to "FOCUS" by rotating the Select Dial, then press it. Rotate the Select Dial to display "MANUAL", then press it. The Manual Mode Item Menu disappears and "FOCUS" is displayed in the upper left corner. The focus is locked at this point.

4 ADJUST FOCUS

To farther subject . . .

.... rotate the Select Dial upward. "▲" appears and blinks. Go to step **5**.

To nearer subject . . .

.... rotate the Select Dial downward. "▼" appears and blinks. Go to step **5**.

5 END ADJUSTMENT OF FOCUS

Press the Select Dial. Focus adjustment is complete. The indication changes from "FOCUS" to "PRO.".

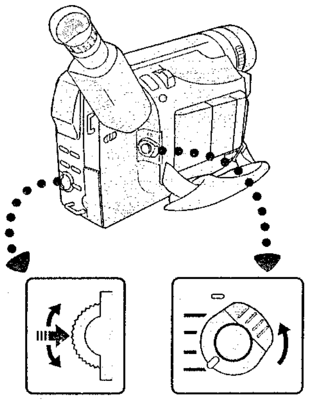
- If you want to reset the focus, repeat from step **2**.

To Change To Auto Focus . . .

.... rotate the Select Dial to display "AUTO" then press it in step **3**. The manual focus indicators disappear. Or set the Power Switch to "AUTO".

NOTES:

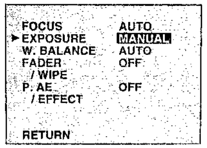
- *After the Power Switch is set to "OFF", Manual Focus is reset to "AUTO".*
- *Be sure to focus the lens in the maximum telephoto position when you use the Manual Focus mode. If you focus in on a certain subject in the wide-angle position, sharply focused images cannot be obtained when zoomed up because the depth-of-field is reduced at longer focal lengths.*
- *When the focus level cannot be adjusted any farther or closer, "⛰" or "👤" will blink.*



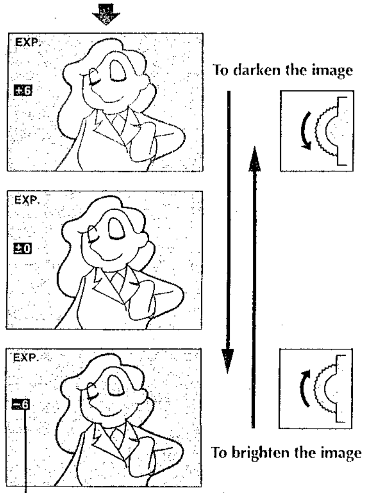
Select Dial

Power Switch

Display



Manual Mode Item Menu



To darken the image

To brighten the image

Exposure control indicator

Exposure Control

This feature automatically adjusts the iris for the best available picture quality, but you can override and make the adjustment manually.

1 SELECT OPERATION MODE

Set the Power Switch to "PRO.".

2 ACCESS MANUAL MODE ITEM MENU

Press the Select Dial. The Manual Mode Item Menu appears.

3 ACCESS EXPOSURE CONTROL

Move the highlight bar to "EXPOSURE" by rotating the Select Dial, then press it. Rotate the Select Dial to display "MANUAL", then press it. The Manual Mode Item Menu disappears. "EXP." and the highlight bar on the exposure control indicator are displayed.

4 ADJUST EXPOSURE

To brighten the image . . .

.... rotate the Select Dial upward. The exposure control indicator increases (maximum +6). Go to step **5**.

To darken the image . . .

.... rotate the Select Dial downward. The exposure control indicator decreases (maximum –6). Go to step **5**.

5 END ADJUSTMENT OF EXPOSURE

Press the Select Dial. Exposure adjustment is complete. The indication "EXP." changes to "PRO." and the highlight bar on the exposure control indicator goes out.

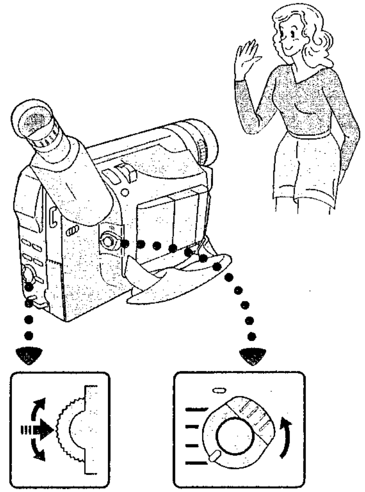
- If you want to reset the exposure, repeat step **2**.

To Return To Automatic Exposure Control . . .

.... rotate the Select Dial to display "AUTO" then press it in step **3**. The exposure control indicator disappears. Or set the Power Switch to "AUTO".

NOTES:

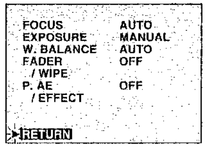
- *After the Power Switch is set to "OFF", Exposure Control is reset to "AUTO".*
- *Manual exposure adjustment is recommended in the following situations:*
  - *When shooting using reverse lighting or when the background is too bright.*
  - *When shooting on a reflective natural background such as at the beach or when skiing.*
  - *When the background is overly dark or the subject light.*



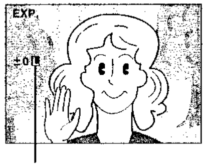
Select Dial

Power Switch

Display



Manual Mode Item Menu



Iris lock indicator

Iris Lock

Use this function when shooting a moving subject, when zooming, when the subject changes its distance (thus its size in the viewfinder), or when you want to lock the brightness level.

When the subject is close, keep the iris locked. Even when the subject moves away from you, the image will not darken or brighten.

1 SELECT OPERATION MODE

Set the Power Switch to "PRO.".

2 ACCESS MANUAL MODE ITEM MENU

Press the Select Dial. The Manual Mode Item Menu appears.

3 ACCESS EXPOSURE CONTROL

Move the highlight bar to "EXPOSURE" by rotating the Select Dial and then press it. Rotate the Select Dial to display "MANUAL", then press it. "EXP." is displayed.

4 CENTRE SUBJECT, LOCK IRIS

Adjust zoom so that the subject fills the viewfinder, then press and hold the Select Dial for over 2 seconds. The exposure control indicator and "🄻" appear, indicating that the iris is locked.
Press the Select Dial. The indication displayed in the upper left corner changes from "EXP." to "PRO.".

To Return To Automatic Iris Control . . .

.... rotate the Select Dial to display "AUTO" then press it in step **3**. The exposure control indicator and "🄻" disappear. Or set the Power Switch to "AUTO".

NOTE:

Iris lock is recommended in the following situations:

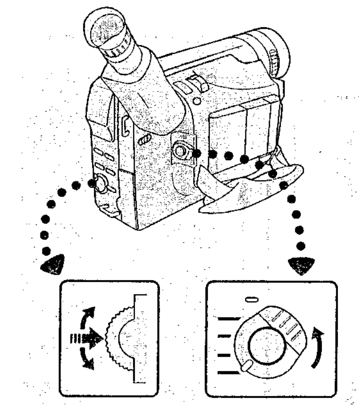
- *When shooting on a reflective natural background such as at the beach or when skiing.*
- *When shooting objects under a spotlight.*
- *When the subject is backing away.*
- *When zooming.*

To Lock The Exposure Control And The Iris . . .

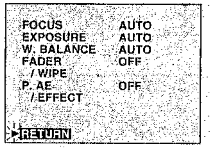
.... after step **3**, adjust the exposure rotating the Select Dial. Then lock the iris in step **4**. For automatic locking, rotate the Select Dial to display "AUTO", then press it in step **3**. The iris becomes automatic after about 2 seconds.

Iris

Works like the pupil of the human eye. In a well-lit environment, the human pupil contracts to keep too much light from entering. In low lighting, the pupil dilates to allow more light in.

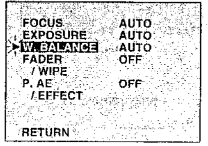


Display

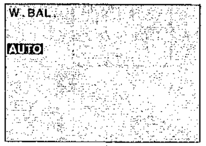


```
FOCUS        AUTO
EXPOSURE     AUTO
W. BALANCE   AUTO
FADER        OFF
  / WIPE
P. AE        OFF
  / EFFECT

▶RETURN
```

Manual Mode Item Menu



```
FOCUS        AUTO
EXPOSURE     AUTO
▶W. BALANCE  AUTO
FADER        OFF
  / WIPE
P. AE        OFF
  / EFFECT

RETURN
```



```
W. BAL.

AUTO
```

White Balance Adjustment

White Balance Adjustment

A term that refers to the correctness of colour reproduction under various lighting. If the white balance is correct, all other colours will be accurately reproduced.
The white balance is usually adjusted automatically. However, the more advanced camcorder operator would prefer to control this function manually and achieve a more professional colour/tint reproduction.

1 SELECT OPERATION MODE

Set the Power Switch to "PRO.".

2 ACCESS MANUAL MODE ITEM MENU

Press the Select Dial. The Manual Mode Item Menu appears.

3 ACCESS WHITE BALANCE ADJUSTMENT

Move the highlight bar to "W.BALANCE" by rotating the Select Dial. Then press it. The Manual Mode Item menu disappears and "W.BAL." appears in the upper left corner and "AUTO" appears on the screen.

4 SET FUNCTION PARAMETERS

Cycle through the available settings of the selected functions by rotating the Select Dial, and stop when the one you want is displayed.

"AUTO" – The white balance is adjusted automatically. This is the factory preset position.
"⊠" – When shooting with the white balance already having been set on the subject (☞ pg. 35).
"☀" – When shooting outdoors on a sunny day.
"☁" – When shooting outdoors on a cloudy day.
"💡" – When using a video light or other similar type of lighting.

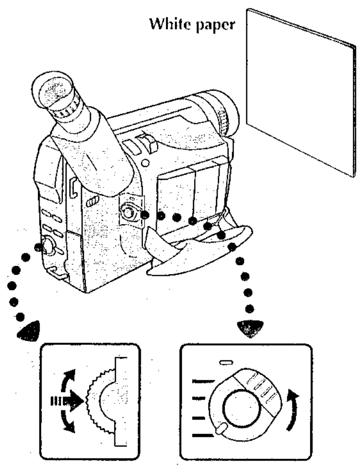
5 CLOSE WHITE BALANCE ADJUSTMENT

Press the Select Dial again. Selection is complete. The indication "W. BAL." changes to "PRO.".

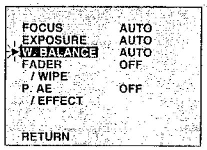
To Return To Automatic White Balance . . .
.... select "AUTO" in step **3**. Or set the Power Switch to "AUTO".

NOTE:

White balance cannot be used when Sepia or Monotone (☞ pg. 29) is activated.

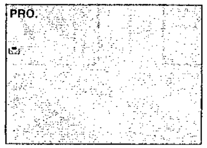


Display



```
FOCUS        AUTO
EXPOSURE     AUTO
▶W. BALANCE  AUTO
FADER        OFF
  / WIPE
P. AE        OFF
  / EFFECT

RETURN
```

Manual Mode Item Menu



```
PRO.

⊠
```

Manual White Balance Adjustment

Manual White Balance Operation

If the camera is operating in PRO. mode, perform a Manual White Balance when shooting under various types of lighting.

1 SELECT OPERATION MODE

Follow steps **1** through **4** of the white balance adjustment (☞ pg. 34), select "⊠ MAN.".

2 SET MANUAL WHITE BALANCE

Hold a sheet of plain white paper in front of the subject. Adjust zoom or position yourself so that the white paper fills the screen.

3 ENTER SETTING

Press the Select Dial until the ⊠ begins blinking.

- When the setting is completed, the ⊠ stops blinking.

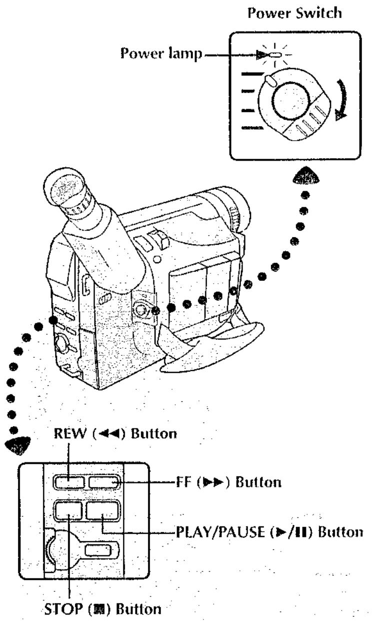
4 EXIT MANUAL WHITE BALANCE ADJUSTMENT

Press the Select Dial. The indication "W.BAL." changes to "PRO." and only the Manual White Balance indicator ⊠ is displayed.

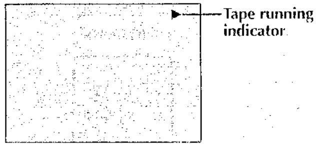
To Change The Tint For Recording . . .
.... in step **2**, substitute coloured paper for white. The white balance is adjusted based on the colour, changing the tint. Red paper — deeper green; blue paper — orange; yellow paper — deeper purple.

NOTES:

- *In step 2, it may be difficult to focus on the white paper in some circumstances. In such a case, adjust focus manually (☞ pg. 31).*
- *A subject can be shot under various types of lighting conditions indoors (natural, flourescent, candlelight, etc.). Because the colour temperature is different depending on the light source, the tint of the subject will differ depending on the white balance settings. Use this function for a more natural result.*
- *Once you adjust white balance during Manual White Balance operation, the setting is retained even if the power is turned off or the battery removed.*



Viewfinder Indication



1 LOAD A CASSETTE

Press **OPEN/EJECT** in the direction of the arrow printed on it, then swing the cassette cover open until it locks. The holder opens automatically.
Insert a tape and press "PUSH HERE" to close the cassette holder.

2 SELECT MODE

Set the Power Switch to "PLAY". The power lamp lights.

3 PLAY BACK

Press **PLAY/PAUSE (►/❚❚)**. The playback picture appears.

4 STOP PLAYBACK

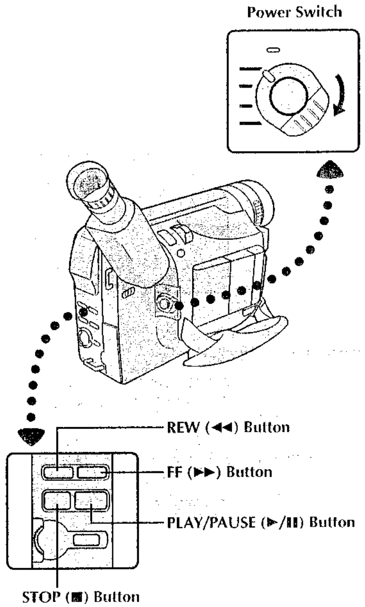
Press **STOP (■)**.

Rewind or Fast-forward the tape

Press **REW (◄◄)** to rewind, or **FF (►►)** to fast-forward the tape during Stop mode.

NOTES:

- *The camcorder shuts off automatically after about 5 minutes in Stop mode. To turn on again, set the Power Switch to "POWER OFF", then to "PLAY".*
- *Copy guarded tapes cannot be played back. The screen becomes blue back.*



FEATURE: Still Playback

PURPOSE:

To pause during playback.

OPERATION:

1) Press **PLAY/PAUSE (►/❚❚)** during playback.
2) To resume normal playback, press **PLAY/PAUSE (►/❚❚)** again.

NOTE:

If still playback continues for more than about 3 minutes, the camcorder's Stop mode is automatically engaged. After 5 minutes in the Stop mode, the camcorder's power is automatically turned off.

FEATURE: Shuttle Search

PURPOSE:

To allow high-speed search in either direction.

OPERATION:

1) Press **FF (►►)** to forward or press **REW (◄◄)** to reverse during playback.
2) To resume normal playback, press **PLAY/PAUSE (►/❚❚)**.

NOTES:

- *During playback, press and hold **REW (◄◄)** or **FF (►►)**. The search continues as long as you hold the button. Once you release it, normal playback resumes.*
- *A slight mosaic effect appears on screen during Shuttle Search. This is not a malfunction.*

FEATURE: Slow-Motion Playback

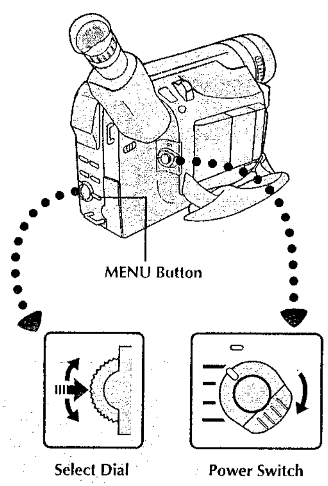
Available only with the RM-V712U remote control (provided) (☞ pg. 45).

FEATURE: Playback Zoom

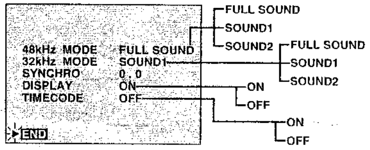
Available only with the RM-V712U remote control (provided) (☞ pg. 46).

FEATURE: Playback Special Effects

Available only with the RM-V712U remote control (provided) (☞ pg. 47).

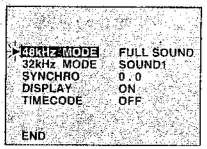


Display



```
48kHz MODE    FULL SOUND
32kHz MODE    SOUND1
SYNCHRO       0 . 0
DISPLAY       ON
TIMECODE      OFF

END
```

Playback Menu



```
48kHz MODE    FULL SOUND
32kHz MODE    SOUND1
SYNCHRO       0 . 0
DISPLAY       ON
TIMECODE      OFF

END
```

Playback Menu

The Playback Menu allows you to set the following functions:
Playback Sound (32 kHz, 48 kHz), Synchro Comp, Display and Time Code. The following procedure applies to all except *Synchro Comp (☞ pg. 52, 53).*

1 SELECT OPERATION MODE

Set the Power Switch to "PLAY".

2 ACCESS PLAYBACK MENU

Press **MENU**. The Playback Menu appears.

3 SELECT FUNCTION

Move the highlight bar to the desired function by rotating the Select Dial. Press the Select Dial to activate.

4 SET FUNCTION PARAMETERS

Rotate the Select Dial to cycle through the available settings for the selected function, and stop when the desired setting appears. Then press the Select Dial, and the highlight bar automatically moves to "END".

- To set parameters for other functions, repeat steps **3** and **4**.

5 CLOSE MENU

Press the Select Dial again, and the menu disappears.

Playback Sound

During playback, the camcorder detects the sound mode in which the recording was made, and plays the sound back. Select the type of sound to accompany your playback picture. (32 kHz is preset to "SOUND 1" and 48 kHz is preset to "FULL SOUND".)

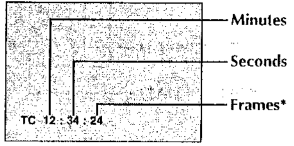
Recording sound	Display	Output sound
32 kHz	FULL SOUND	Stereo sound
	SOUND 1	
	SOUND 2	
48 kHz	FULL SOUND	Stereo sound
	SOUND 1	"L" sound is output on both channels
	SOUND 2	"R" sound is output on both channels

When watching a tape recorded at 32 kHz, if you want to change the output sound, access the Playback Menu and, in step **3** on page 38, select "32kHz MODE" and set it for "FULL SOUND", "SOUND 1" or "SOUND 2". When playing back a tape recorded at 48kHz, set in the same manner. For information on output sound during Audio Dubbing, see page 55.

NOTES:

- *You can also use the provided RM-V712U remote control's* ***AUDIO MONITOR*** *button to change the output sound (without having to access the Playback Menu). Make sure you point the remote control at the camcorder's remote sensor.*
- *During playback, the camcorder detects the sound mode in which the recording was made. This detection cannot be made during fast-forward or rewind. During playback the sound mode is displayed in the upper left corner.*

Display



*25 frames = 1 second

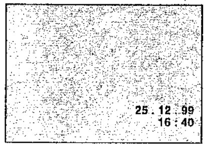
TIME CODE

(Displaying The Time Code During Playback)

You can display the Time Code on screen during playback. This is especially useful for editing. This function is preset to "OFF". To turn it on, select "TIME CODE" at the Playback Menu and change the setting (☞ pg. 38).

ON– The Time Code is displayed on the playback screen.

OFF– The Time Code does not appear.



DISPLAY

(Displaying the Date During Playback)

If the time has been set, the date is automatically recorded separately from the recorded video signal. You can display or remove the date anytime during playback. This function is preset to "ON". To turn it off, select "DISPLAY" at the Playback Menu and change the setting (☞ pg. 38).

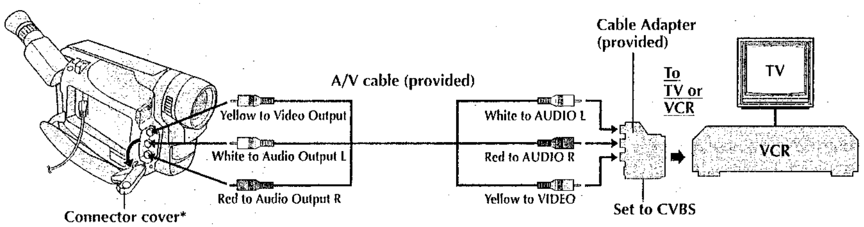
ON– The date is displayed on the playback screen.

OFF– The date is not displayed.

These are some basic types of connections. When making the connections, refer also to your VCR and TV instruction manuals.

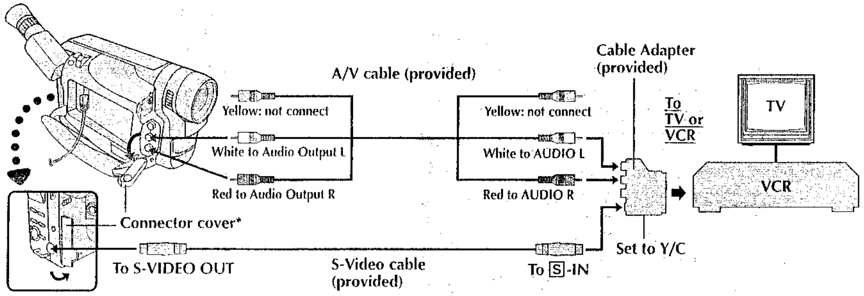
A. Connection to a TV or VCR equipped with a SCART connector compatible only with regular video signal

Use the provided Audio/Video (A/V) cable.


Cable Adapter (provided)
A/V cable (provided)
To TV or VCR
TV
Yellow to Video Output
White to Audio Output L
Red to Audio Output R
White to AUDIO L
Red to AUDIO R
Yellow to VIDEO
VCR
Set to CVBS
Connector cover*

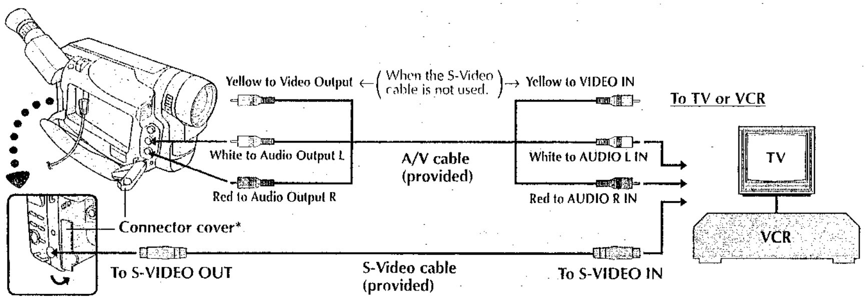
B. Connection to a TV or VCR equipped with a SCART connector compatible with Y/C signal

Use the provided Audio/Video (A/V) cable and S-Video cable.


Cable Adapter (provided)
A/V cable (provided)
To TV or VCR
TV
Yellow: not connect
White to Audio Output L
Red to Audio Output R
Yellow: not connect
White to AUDIO L
Red to AUDIO R
VCR
Connector cover*
Set to Y/C
To S-VIDEO OUT
S-Video cable (provided)
To S-IN

C. Connection to a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors

Use the provided Audio/Video (A/V) cable and S-Video cable.


Yellow to Video Output
When the S-Video cable is not used.
Yellow to VIDEO IN
To TV or VCR
White to Audio Output L
A/V cable (provided)
White to AUDIO L IN
TV
Red to Audio Output R
Red to AUDIO R IN
Connector cover*
VCR
To S-VIDEO OUT
S-Video cable (provided)
To S-VIDEO IN

* When connecting the cables, open this cover.

---

1 CONFIRM POWER-OFF STATUS

Make sure the camcorder's power is off.

2 CONNECT CAMCORDER TO TV OR VCR

Pull out the connector cover and open it. Connect as shown in the illustration (☞ pg. 40).

If Using A VCR . . . go to step 3.
If not . . . go to step 4.

3 CONNECT VCR OUTPUT TO TV INPUT

Refer to your VCR's instruction manual.

4 SUPPLY POWER

Turn on the camcorder, the VCR and the TV.

5 SELECT MODE

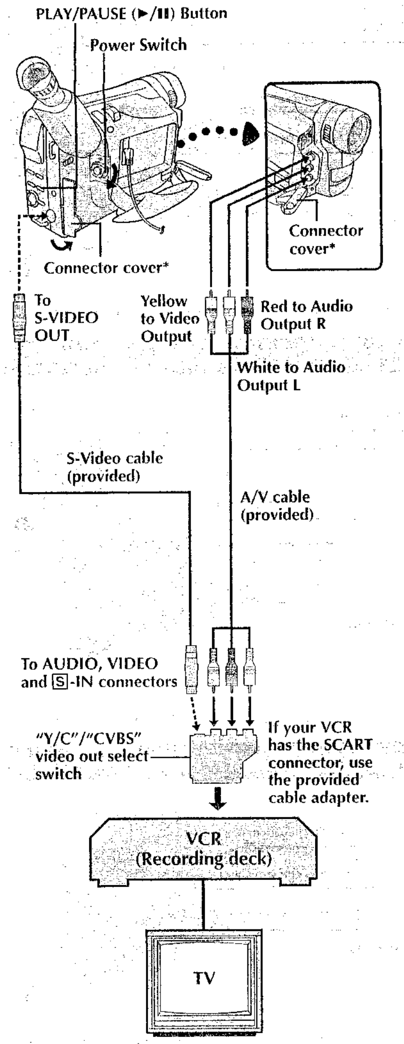
Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

To choose whether or not the following displays appear on the connected TV . . .

- Date/Time, Time Code
  .... set to "ON" or "OFF" in the Playback Menu (☞ pg. 38).
- Playback Sound Mode Display
  .... set the Power Switch to "PRO.", press **MENU**, and set "ON SCREEN" in the Date/Time Menu (☞ pg. 9) to "ON" or "OFF". Then set the Power Switch back to "PLAY".

NOTES:

- ***It is recommended to use the AC Power Adapter/Charger as the power supply instead of the battery pack (☞ pg. 7).***
- *To monitor the picture and sound from the camcorder without inserting a tape, set the camcorder's Power Switch to "CAMERA", then set your TV to the appropriate input mode.*
- *Make sure you adjust the TV sound volume to its minimum level to avoid a sudden burst of sound when the camcorder is turned on.*
- *If you have a TV or speakers that are not specially shielded, do not place the speakers adjacent to the TV as interference will occur in the camcorder playback picture.*
- *To keep the camcorder's display from appearing on the TV screen during playback, press* ***DISPLAY*** *for longer than 1 second.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C: When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS: When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.


PLAY/PAUSE (►/II) Button
Power Switch
Connector cover*
Connector cover*
To S-VIDEO OUT
Yellow to Video Output
Red to Audio Output R
White to Audio Output L
S-Video cable (provided)
A/V cable (provided)
To AUDIO, VIDEO and Ⓢ-IN connectors
"Y/C"/"CVBS" video out select switch
If your VCR has the SCART connector, use the provided cable adapter.
VCR (Recording deck)
TV

* When connecting the cables, open this cover.

Tape Dubbing

1 CONNECT EQUIPMENT

Following the illustration at left, connect the camcorder and the VCR. Also refer to pg. 40 and 41.

2 PREPARE FOR DUBBING

Set the camcorder's Power Switch to "PLAY", turn on the VCR's power, and insert the appropriate cassettes in the camcorder and the VCR.

3 SELECT VCR MODE

Engage the VCR's AUX and Record-Pause modes.

4 FIND EDIT-IN POINT

Engage the camcorder's Play mode to find a spot just before the edit-in point. Once it is reached, press **PLAY/PAUSE (►/II)** on the camcorder.

5 START EDITING

Press **PLAY/PAUSE (►/II)** on the camcorder and engage the VCR's Record mode.

6 STOP EDITING TEMPORARILY

Engage the VCR's Record-Pause mode and press **PLAY/PAUSE (►/II)** on the camcorder.

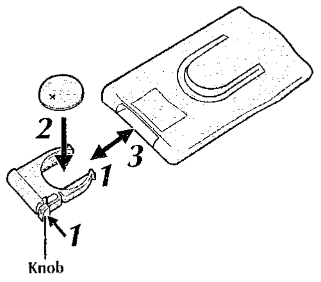
7 EDIT MORE SEGMENTS

Repeat steps **4** through **6** for additional editing, then stop the VCR and camcorder when finished.

NOTES:

- *You can use Playback Zoom (☞ pg. 46) or Playback Special Effects (☞ pg. 47) in step **5**.*
- *Before you start dubbing, make sure that the indications do not appear on the connected TV. If they do appear during dubbing, they are being recorded onto the new tape.*
  *To clear the Playback Sound Mode Display, press **DISPLAY** on the RM-V712U remote control (provided).*
- *Select "DISPLAY" and "TIME CODE" from the Playback Menu (☞ pg. 38) to show or hide the Date/Time and the Time Code on the recording.*
- *To show or hide all indications, press **DISPLAY** on the camcorder for longer than 1 second.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C: When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS: When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.

The Full-Function Remote Control Unit can operate this camcorder from a distance as well as the basic operations (Playback, Stop, Pause, Fast-Forward and Rewind) of your VCR. This remote control unit makes additional playback functions possible.



Installing The Battery

The remote control uses one lithium battery (CR2025).

1 PULL OUT BATTERY HOLDER

Pull out the battery holder while pressing the knob as shown.

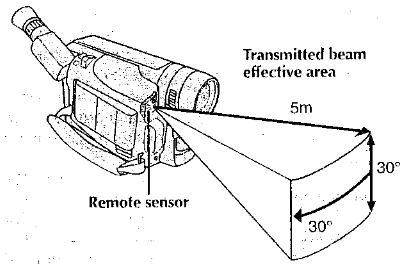
2 INSERT BATTERY IN HOLDER

Insert the battery in the holder, and be sure to have the "+" mark visible.

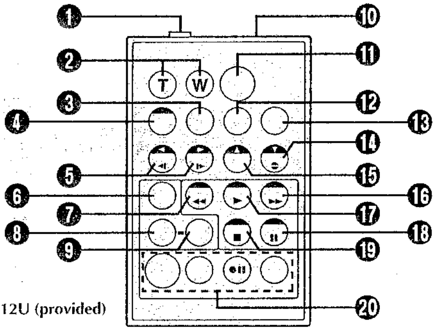
3 RE-INSERT HOLDER

Slide the holder back in until you hear a click.

- Read the caution concerning lithium batteries (☞ pg. 2).

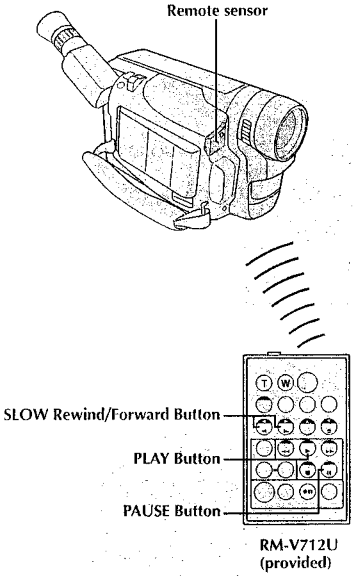

Transmitted beam effective area
5m
30°
30°
Remote sensor

When using the remote control, be sure to point it at the remote sensor. The illustration shows the approximate transmitted beam effective area for indoor use.
The transmitted beam may not be effective or may cause incorrect operation outdoors or when the remote sensor is directly exposed to sunlight or powerful lighting.



RM-V712U (provided)

Buttons	Functions	
	With the camcorder's Power Switch set to "CAMERA" ("AUTO" or "PRO.").	With the camcorder's Power Switch set to "PLAY".
① PAUSE IN Connector	—	☞ pg. 49
② Zoom (T/W) Buttons	Zoom in/out (☞ pg. 16)	Zoom in/out (☞ pg. 46)
③ DISPLAY Button	—	☞ pg. 42
④ SHIFT Button	—	☞ pg. 46
⑤ SLOW Rewind/Forward Buttons Left/Right Buttons	— —	☞ pg. 45 ☞ pg. 46
⑥ FADE/WIPE Button	—	☞ pg. 49
⑦ REW Button	—	Rewind, Reverse Shuttle Search (☞ pg. 36, 37)
⑧ EFFECT Button	—	☞ pg. 47
⑨ EFFECT ON/OFF Button	—	☞ pg. 47
⑩ Infrared beam transmitting window	Transmits the beam signal.	
⑪ START/STOP Button	Functions same as the Recording Start/Stop button on the camcorder.	
⑫ AUDIO MONITOR Button	—	☞ pg. 39
⑬ MBR SET Button	—	☞ pg. 48
⑭ Down Button A. DUB Button	— —	☞ pg. 46 ☞ pg. 54
⑮ Up Button	—	☞ pg. 46
⑯ FF Button	—	Fast-Forward, Forward Shuttle Search (☞ pg. 36, 37)
⑰ PLAY Button	—	Playback start (☞ pg. 36)
⑱ PAUSE Button	—	Pause (☞ pg. 37)
⑲ STOP Button	—	Stop (☞ pg. 36)
⑳ R.A.EDIT Buttons	—	☞ pg. 48 – 53



FEATURE: Slow-Motion Playback

PURPOSE:

To allow slow-speed search in either direction.

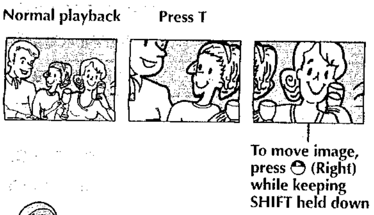
OPERATION:

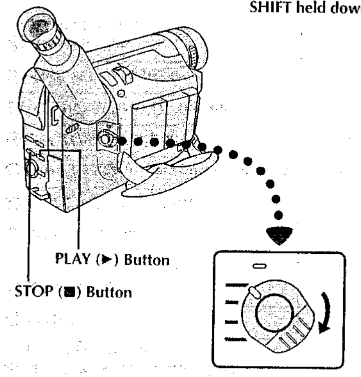
1) To change from normal to Slow-Motion Playback, press **PAUSE (❚❚)** at the point where you want to start playback in slow motion.
2) Press **SLOW** (◂❙ or ❙▸). After playing back for approx. 20 seconds in Slow Rewind or approx. 60 seconds in Slow Forward, normal playback resumes.

■ To stop Slow-Motion Playback in progess, press **PLAY** (▶).

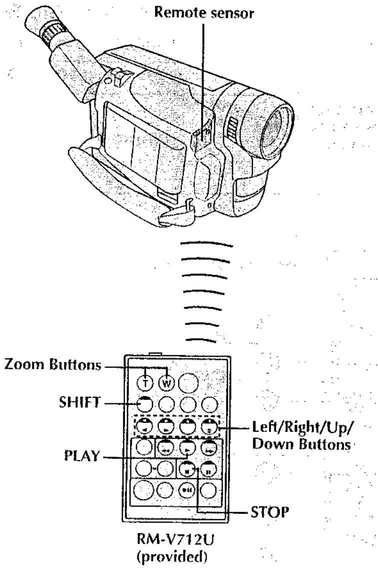
NOTES:

- *During slow-motion playback, due to digital image processing, the picture may take on a mosaic effect.*
- *After* ***SLOW*** *(◂❙ or ❙▸) is pressed, the still image may be displayed for a few seconds, then the screen may become blue back for a few seconds. This is not a malfunction.*
- *There may be a small margin between the slow-motion playback start point you chose and the start point at which the camcorder actually begins playback in slow motion.*
- *During Slow-motion playback, there will be disturbances in video. This is not a malfunction.*


Normal playback
Press T
To move image, press ○ (Right) while keeping SHIFT held down


PLAY (►) Button
STOP (■) Button

Power Switch


Remote sensor
Zoom Buttons
SHIFT
PLAY
Left/Right/Up/Down Buttons
STOP
T
W

RM-V712U
(provided)

Playback Zoom

The recorded pictures can be magnified up to 10X at any time during playback.

1 FIND SCENE OF INTEREST

Press **PLAY** (►) to start playback.

2 ACTIVATE ZOOM

Press the Zoom Buttons (**T/W**) on the remote control. Make sure the remote control is pointed at the camcorder's remote sensor.

- Pressing **T** zooms in.

3 END ZOOM

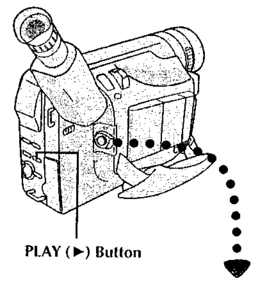
Press and hold **W** until magnification returns to normal. Or, press **STOP** (■) and then press **PLAY** (►).

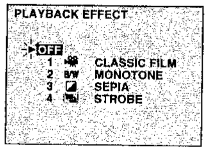
NOTES:

- *Zoom can also be used during Slow-Motion and Still Playback.*
- *During digital image processing, the quality of the image may suffer.*

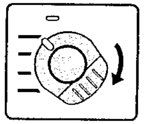
INFORMATION

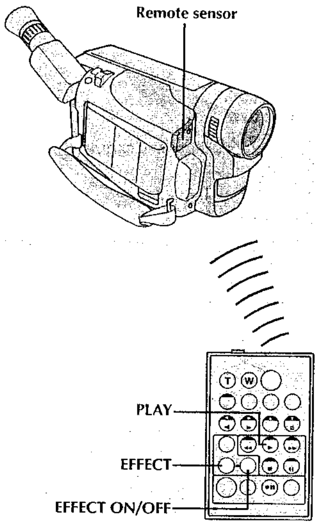
You can move the image on screen around to find a particular portion of the picture. While holding down **SHIFT**, press ○ **(Left)**, ○ **(Right)**, ○ **(Up)** and ○ **(Down)**.


PLAY (►) Button


PLAYBACK EFFECT
OFF
1 CLASSIC FILM
2 MONOTONE
3 SEPIA
4 STROBE

PLAYBACK EFFECT
Select Menu


Power Switch


Remote sensor
PLAY
EFFECT
EFFECT ON/OFF
T
W

RM-V712U
(provided)

Playback Special Effects

These effects allow you to be creative with the playback picture. You can use any one of the 4 effects.

1 START PLAYBACK

Press **PLAY** (►).

2 ACCESS PLAYBACK EFFECT SELECT MENU

Point the remote control at the camcorder's remote sensor and press **EFFECT**. The PLAYBACK EFFECT Select Menu appears.

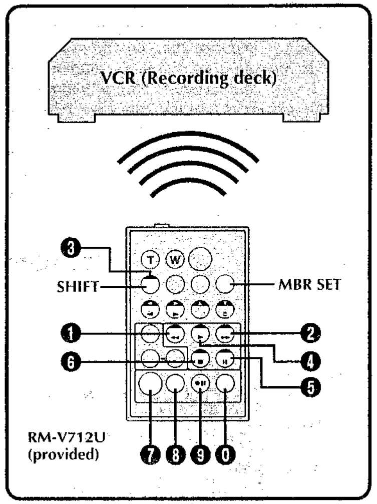
3 SELECT PLAYBACK EFFECT

Move the highlight bar to the desired effect by pressing **EFFECT**. The selected function is activated and after 2 seconds the menu disappears.

NOTES:

- *To deactivate the selected effect, press* ***EFFECT ON/OFF*** *on the remote control. Pressing it again re-activates the selected effect.*
- *Repeat from step* ***2*** *when you want to change the selected effect.*
- *When "MONOTONE" or "SEPIA" is activated, the "MULTI 4" and "MULTI 9" Snapshot modes (☞ pg. 21) are not available.*

The effects that can be used during playback are Classic Film, Monotone, Sepia and Strobe. The effects work the same in playback as they did in recording. Refer to page 29 for more information.


VCR (Recording deck)
❸
SHIFT
MBR SET
❶
❷
❻
❹
❺
RM-V712U
(provided)
❼❽❾⓿

VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
AKAI	❻ ❷ ❻ ❹ ❼ ❼
BLAUPUNKT	❶ ❸
FERGUSON	❾ ❼ ❾ ❽ ❸ ❷
GRUNDIG	❶ ❹ ❸ ❹
HITACHI	❻ ❻ ❻ ❸
JVC A B C	❾ ❶ ❾ ❻ ❾ ❸
MITSUBISHI	❽ ❼ ❻ ❽
NEC	❸ ❼ ❸ ❽
PANASONIC	❶ ❸ ❶ ❼ ❶ ❶ ❾ ❹ ❶ ❽
PHILIPS	❶ ❾ ❾ ❺ ❶ ❶ ❾ ❹ ❾ ❶ ❾ ❻ ❶ ❷ ❸ ❸ ❼ ❷
SANYO	❸ ❻ ❸ ❺
SELECO, REX	❾ ❶ ❾ ❻
SHARP	❶ ❺ ❶ ⓿
SONY	❻ ❺ ❻ ⓿ ❸ ❾ ❸ ❶
THOMSON, TELEFUNKEN, SABA, NORDMENDE	❾ ❶ ❾ ❻ ❾ ❼ ❸ ❷
TOSHIBA	❻ ❾ ❻ ❶

Random Assemble Editing [R.A.Edit]

Create edited videos easily using your camcorder as the source player. You can select up to 8 "cuts" for automatic editing, in any order you like. R.A.Edit is more easily performed when the RM-V712U MBR (Multi-Brand Remote, ☞ pg. 43) is set to operate with your brand of VCR (see VCR CODE LIST), but can also be performed by operating the VCR manually.
Before operation, make sure the lithium battery is installed in the remote control RM-V712U (☞ pg. 43).

SET REMOTE/VCR CODE

1 SET REMOTE TO OPERATE VCR
Turn off the power to the VCR and point the remote towards the VCR's infrared sensor. Then, referring to the VCR CODE LIST on the left, press and hold **MBR SET**, and press button (A) and then (B).

- The code is automatically set once you release **MBR SET**, and the VCR's power comes on.

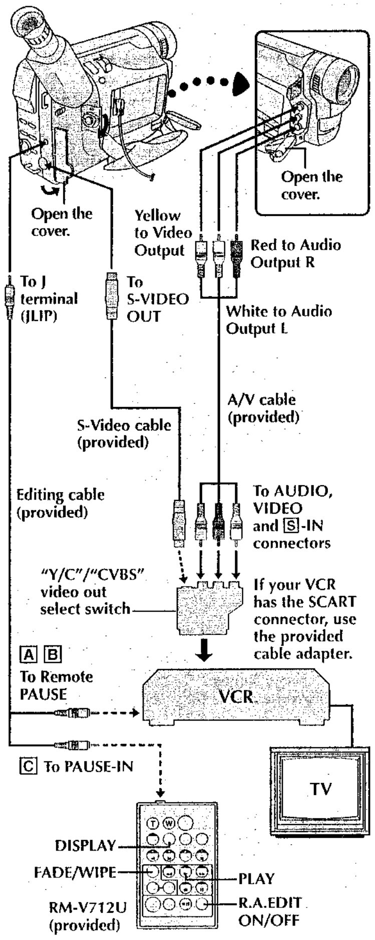
2 OPERATE VCR
Make sure the VCR's power is on. Then, while holding **SHIFT**, press the button on the remote for the desired function. The functions the remote can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY (you do not need to press **SHIFT** for this one).
You are now ready to try Random Assemble Editing.

IMPORTANT

Although the MBR is compatible with JVC VCRs and those of many other makers, it may not work with yours or may offer limited functions.

NOTES:

- *If the VCR's power does not come on in step **1**, try another code from the VCR CODE LIST.*
- *Some brands of VCR do not come on automatically. In this case, turn the power on manually and try step **2**.*
- *If the remote control is not able to control the VCR, use the controls on the VCR.*
- *When the remote control's battery runs out, the VCR brand you have set will be erased.*
  In that case, replace the old battery with a new one to reset the VCR brand.


Open the cover.
Open the cover.
Yellow to Video Output
Red to Audio Output R
To J terminal (JLIP)
To S-VIDEO OUT
White to Audio Output L
A/V cable (provided)
S-Video cable (provided)
Editing cable (provided)
To AUDIO, VIDEO and 🅂-IN connectors
"Y/C"/"CVBS" video out select switch
If your VCR has the SCART connector, use the provided cable adapter.
🄰 🄱 To Remote PAUSE
VCR
🄲 To PAUSE-IN
TV
DISPLAY
FADE/WIPE
PLAY
R.A.EDIT ON/OFF
RM-V712U (provided)

MAKE CONNECTIONS

1 CONNECT TO . . .

🄰 **JVC VCR EQUIPPED WITH REMOTE PAUSE TERMINAL**
Connect the editing cable to the Remote PAUSE terminal.

🄱 **JVC VCR NOT EQUIPPED WITH REMOTE PAUSE TERMINAL BUT EQUIPPED WITH R.A. EDIT CONNECTOR**
Connect the editing cable to the R.A.EDIT connector.

🄲 **VCR OTHER THAN TYPE 🄰 OR 🄱**
Connect the editing cable to the RM-V712U's PAUSE-IN connector.

2 PREPARE CAMCORDER
Insert a recorded tape and set the Power Switch to "PLAY".

3 PREPARE VCR
Turn the power on, insert a recordable tape and engage the AUX mode (refer to VCR's instructions).

SELECT SCENES

4 START SOURCE PLAYBACK
First set the Power Switch to "PLAY". Press **PLAY** (▶) and then press **R.A. EDIT ON/OFF** on the remote control. Make sure to point the remote control at the camcorder's remote sensor.

- The Random Assemble Editing Menu appears.

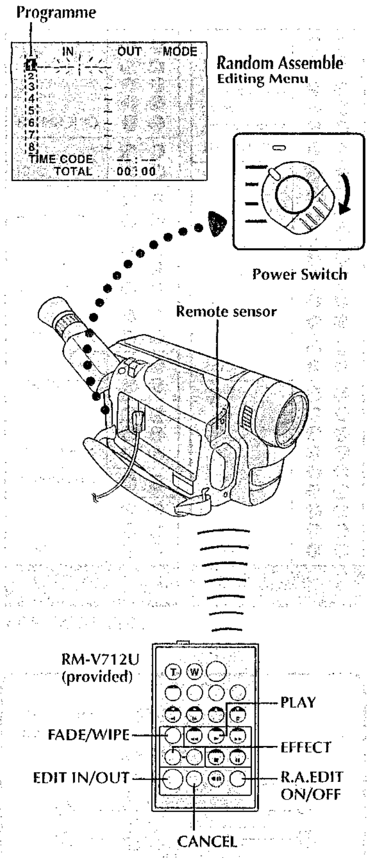
5 EXECUTE FADE/WIPE IN (IF NECESSARY)
Press **FADE/WIPE** on the remote control.

- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- You cannot use a Picture Wipe/Dissolve at the beginning of Programme 1.

NOTES:

- *Before Random Assemble Editing, make sure the indications do not appear on the TV monitor. If they appear during Random Assemble Editing, they will be recorded onto the new tape. To clear the Playback Sound Mode Display, press **DISPLAY** on the remote control. Select "DISPLAY" and "TIME CODE" from the Playback Menu (☞ pg. 38) to show or hide the Date/Time and the Time Code on the recording. To show or hide all indications except for the Random Assemble Editing Menu, press **DISPLAY** on the camcorder for longer than 1 second. When Random Assemble Editing starts, its indications disappear and are not recorded on the new tape.*
- *Set the video out select switch of the cable adapter as required:*
  Y/C: When connecting to a TV or VCR which accepts Y/C signals and uses an S-Video cable.
  CVBS: When connecting to a TV or VCR which does not accept Y/C signals and uses an audio/video cable.

CONTINUED ON NEXT PAGE



SELECT SCENES (cont.)

6 SET EDIT-IN POINT

At the beginning of the scene, press **EDIT IN/OUT** on the remote control. The Edit-In position appears on the Random Assemble Editing Menu.

7 SET EDIT-OUT POINT

At the end of the scene, press **EDIT IN/OUT**. The Edit-Out position appears on the Random Assemble Editing Menu.

8 USE FADE/WIPE ON SCENE TRANSITION (IF NECESSARY)

Press **FADE/WIPE**.

- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- If you select a Fade/Wipe effect for an Edit-Out point, the effect is automatically applied to the following Edit-In point.
- You cannot use a Picture Wipe/Dissolve at the end of the last scene.
- When you use Fade/Wipe effects, that time is included in the total time (this does not apply to Picture Wipe/Dissolve).

9 USE PROGRAMME AE WITH SPECIAL EFFECTS (IF NECESSARY)

Press **EFFECT**.

- Cycle through the effects by pressing repeatedly, and stop when the one you want is displayed.
- You can use Classic Film, Monotone, Sepia or Strobe mode.

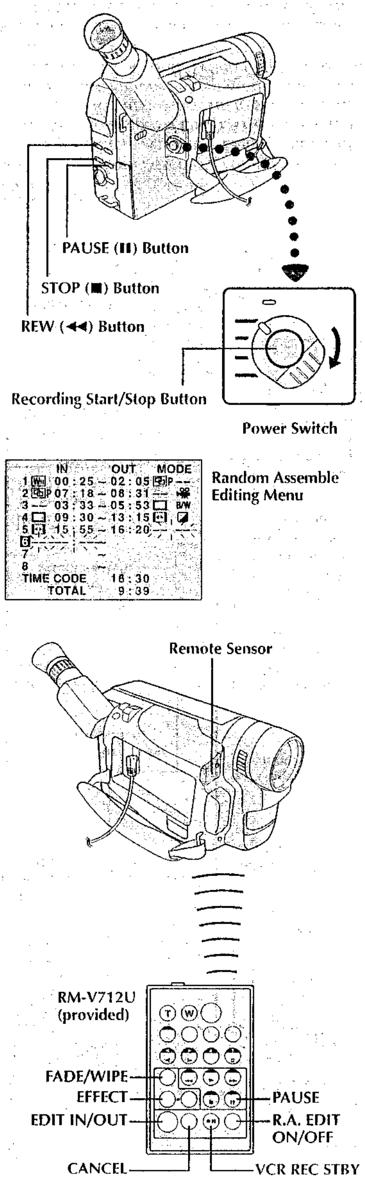
10 REGISTER ADDITIONAL SCENES

Repeat steps **6** through **9**.

- To change previously registered points, press **CANCEL** on the remote control. The registered points disappear, one at a time, from the most recently registered point.
- If you are not using Fade/Wipe or Programme AE with special effects, repeat steps **6** and **7** only.

NOTES:

- *When the source tape has more than 2 identical time codes (☞ pg. 18), the camcorder may not find the Edit-In point you chose and a malfunction may occur.*
- *When choosing a scene, set Edit-In and Edit-Out points so that there is a relatively large difference between them.*
- *If the search time for an in-point exceeds 5 minutes, the recording deck's Record-Standby mode will be cancelled and editing will not take place.*
- *If there are blank portions before or after the Edit-In and Edit-Out points, a blue-backed screen may be included in the edited version.*
- *Since time codes register time only as accurately as seconds, the time code total time may not match the total programme time exactly.*
- *Turning off the camcorder's power erases all registered Edit-In and Edit-Out points.*
- *If you select Sepia or Monotone mode from Programme AE with special effects, you cannot use the Dissolve or Black & White Fader. In this case the Dissolve or Black & White indicator begins blinking. Once the next Edit-In point is registered, the effect is turned off. To combine these effects, use Sepia or Monotone during recording, then use Dissolve or Black & White Fader during Random Assemble Editing.*



```
     IN          OUT      MODE
1 ▣  00:25 ~ 02:05 ▣P --
2 ▣P 07:18 ~ 08:31 --  ▣
3 -- 03:33 ~ 05:53 □  B/W
4 □  09:30 ~ 13:15 ▣  ◪
5 ▣  15:55 ~ 16:20 --  --
6 --:-- ~
7       ~
8       ~
TIME CODE    16:30
    TOTAL     9:39
```

AUTOMATIC EDITING TO VCR

11 PREPARE SOURCE TAPE

Rewind the tape in the camcorder to the beginning of the scene you want to edit and press **PAUSE (II)**.

12 ENGAGE VCR'S RECORD-PAUSE MODE

Point the remote control towards the VCR's remote sensor and press **VCR REC STBY (● II)**, or manually engage the VCR's Record-Pause mode.

13 START EDITING

Press the Recording Start/Stop Button on the camcorder. Editing proceeds as programed, right through to the end of the last registered scene.

- Pressing **START/STOP** on the remote control does not start editing.
- When dubbing is complete, the camcorder enters the Pause mode, and the recording deck enters its Record-Standby mode.
- If you do not register an Edit-Out point, the tape will be dubbed all the way to the end automatically.

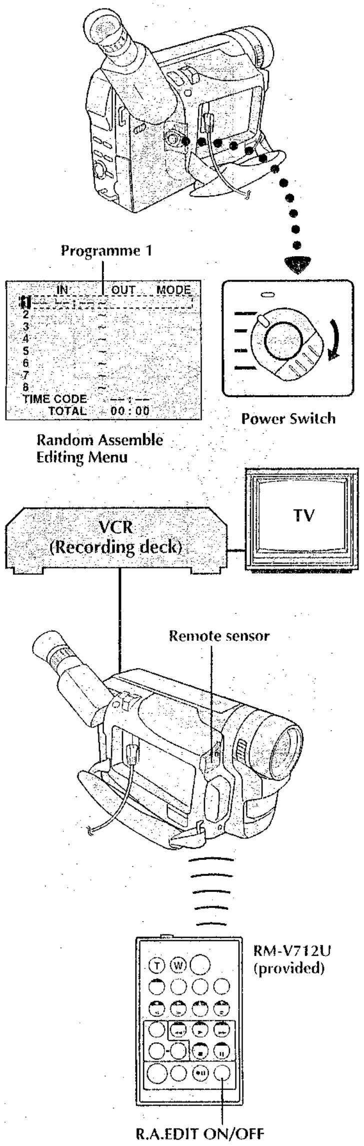
14 STOP EDITING

Engage the Stop modes for the camcorder and the VCR.

To make the R.A. Edit counter display disappear, press **R.A. EDIT ON/OFF** on the remote control.

NOTES:

- *Pressing **R.A. EDIT ON/OFF** on the remote control clears all settings registered during Random Assemble Editing.*
- *When the editing cable is connected to the Pause terminal during dubbing, make sure the remote control is pointed at the VCR's sensor, and that the path between the two is unobstructed.*
- *Random Assemble Editing may not function properly when using a tape including several duplicated Time Codes (☞ pg. 18).*



For More Accurate Editing

Some VCRs make the transition from Record-Standby to Record mode faster than others. Even if you begin editing for the camcorder and the VCR at exactly the same time, you may lose scenes you wanted, or find that you have recorded scenes you did not want. For a cleanly edited tape, confirm and adjust the timing of the camcorder against your VCR.

DIAGNOSING VCR'S AGAINST CAMCORDER TIMING

1 PREPARE FOR R.A. EDIT

Play back the tape in the camcorder, then point the remote control at the camcorder's remote sensor and press **R.A. EDIT ON/OFF**.

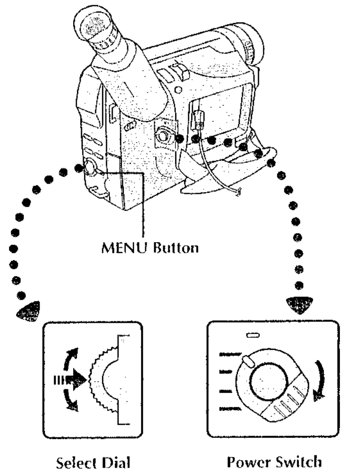
- "Random Assemble Editing Menu" appears.

2 CHOOSE A SCENE

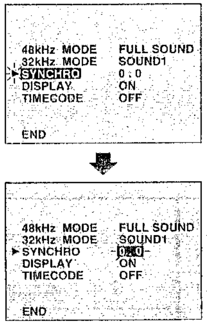
Perform Random Assemble Editing on Programme 1 only. In order to check VCR and camcorder timing, select the beginning of a scene transition as your Edit-In point.

3 PLAY BACK DUBBED SCENE

- If any images from the scene prior to the transition you chose for your Edit-In point were recorded, that means your VCR moves quickly from Record-Pause to Record mode.
- If the scene you tried to dub starts in progress, the VCR is slow to start recording.



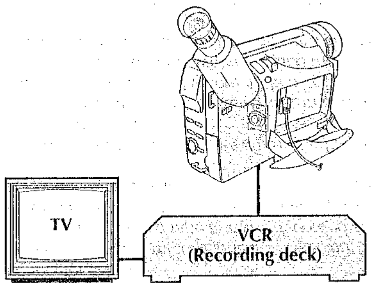
Display



48kHz MODE FULL SOUND
32kHz MODE SOUND1
SYNCHRO 0 : 0
DISPLAY ON
TIMECODE OFF
END

48kHz MODE FULL SOUND
32kHz MODE SOUND1
SYNCHRO -0:0-
DISPLAY ON
TIMECODE OFF
END

Playback Menu



ADJUSTMENT OF VCR'S AGAINST CAMCORDER TIMING

4 ACCESS PLAYBACK MENU

Point the remote control at the camcorder's remote sensor and press **R.A. EDIT ON/OFF** to make the Random Assemble Editing menu disappear, then press **MENU**. The Playback Menu appears.

5 SELECT FUNCTION

Move the highlight bar to "SYNCHRO" by rotating the Select Dial, then press it. The value for "SYNCHRO" is highlighted.

6 INPUT CORRECTION DATA

Based on the diagnostics performed (☞ pg. 52), you can now increase the VCR's speed by rotating the Select Dial upward. You can also slow down the VCR's speed by rotating the Select Dial downward. The adjustment range is from –1.3 to +1.3 seconds, in 0.1-second increments.

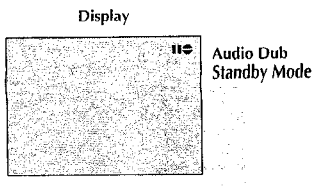
7 CLOSE MENU

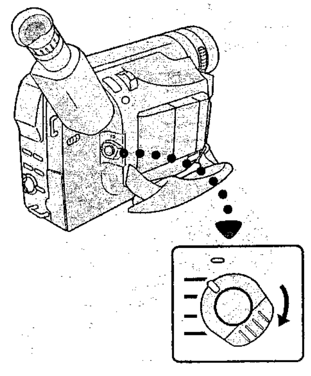
Press the Select Dial twice.

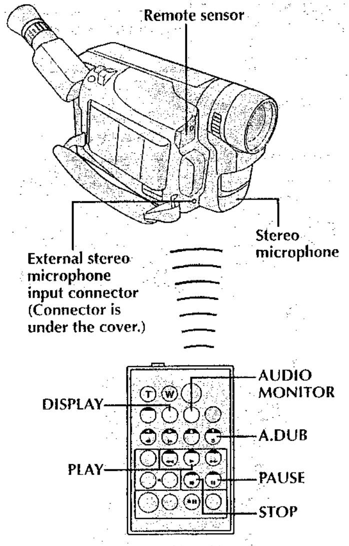
- Now perform Random Assemble Editing beginning with step 3 on page 49.

NOTES:

- *Before performing actual Random Assemble Editing, do a few Random Assemble Editing trial runs to check whether the value you have input is appropriate or not, and make adjustments accordingly.*
- *Depending on the recorder, there may be situations where the timing difference cannot be fully corrected.*




Power Switch


Remote sensor
Stereo microphone
External stereo microphone input connector (Connector is under the cover.)
DISPLAY
PLAY
AUDIO MONITOR
A.DUB
PAUSE
STOP

RM-V712U
(provided)

Audio Dubbing

The audio track can be customized only when recorded on the 32 kHz mode (☞ pg. 24).

NOTES:

- *Audio Dubbing is not possible on a tape recorded at 48 kHz, on a tape recorded in the LP mode or on a blank portion of a tape.*
- *To perform Audio Dubbing while watching in the television, make connections (☞ pg. 40).*

1 FIND EDIT-IN POINT

Play back the tape to locate the point where editing will start, then press **PAUSE (II)**.

2 ENGAGE AUDIO DUB STANDBY

While holding **A. DUB (⏏)** on the remote control, press **PAUSE (II)**. "**II⏏**" appears.

3 BEGIN DUBBING

Press **PLAY (▶)**, then begin "narrating".

- Speak into the microphone.

4 PAUSE DURING DUBBING

Press **PAUSE (II)**.

5 STOP DUBBING

Press **STOP (■)**.

NOTES:

- *Audio dubbing is possible using an optional microphone connected to the external microphone input connector (MIC).*
- *While an optional microphone is connected, the built-in microphone is disabled.*
- *When editing onto a tape that was recorded at 32 kHz, the old and new soundtracks are recorded separately.*
- *To select the desired sound for playback, press* ***AUDIO MONITOR*** *on the remote control.*
- *If you dub onto a blank space on the tape, the sound may be disrupted. Make sure you only edit recorded areas.*
- *If feedback or howling occurs during TV Playback, move the camcorder's microphone away from the TV, or turn down the TV's volume.*
- *If you change from 32 kHz to 48 kHz in mid-recording and then use the tape for Audio Dubbing, it is not effective from the point where 48 kHz recording began.*
- *During Audio Dubbing, when the tape moves to scenes recorded in the LP mode, scenes recorded at 48 kHz or a blank portion, Audio Dubbing stops and "ERROR! REFER MANUAL" appears.*

Recording sound	Display	Output sound
32 kHz	FULL SOUND	Original and new tracks are combined and output in stereo.
	SOUND 2	New track is output on both "L" and "R" channels in stereo.
	SOUND 1	Original track is output on both "L" and "R" channels in stereo.

If, after following the steps in the chart below, the problem still exists, please consult your nearest JVC dealer.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and remove the clock battery; and then re-connect it and proceed as usual from the beginning.

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
1. No power is supplied.	*1.* • The power is not connected properly. • The battery is dead.	*1.* • Connect the AC Power Adapter/Charger securely (☞ pg. 7). • Replace the dead battery with a fully charged one (☞ pg. 6).
2. "SET DATE/TIME!" appears.	*2.* • The clock lithium battery is either not installed or has discharged. • The previously set date/time is erased.	*2.* • Install a battery or replace the old battery with a new one (☞ pg. 8).
3. Recording cannot be performed.	*3.* • The tape's record safety tab is set to "SAVE". • The Power Switch is set to "PLAY". • "TAPE END" appears. • The cassette's cover is open.	*3.* • Set the tape's record safety tab to "REC" (☞ pg. 10). • Set the Power Switch to "AUTO" or "PRO." (☞ pg. 14). • Replace with new cassette (☞ pg. 10). • Close the cassette's cover.
4. There is no playback picture.	*4.* • The camcorder is not getting power, or some other malfunction exists.	*4.* • Turn the camcorder's power off and on again (☞ pg. 14).
5. Some functions are not available using **MENU**.	*5.* • The Power Switch is set to "AUTO".	*5.* • Set the Power Switch to any position except "AUTO" (☞ pg. 14).
6. During shooting, some functions are not available using the Select Dial.	*6.* • The Power Switch is set to "AUTO".	*6.* • Set the Power Switch to "PRO." (☞ pg. 14).
7. The focus does not adjust automatically.	*7.* • Focus is set to "MANUAL". • The recording was done in a dark place, or the contrast was low. • The lens is dirty or covered with condensation.	*7.* • Set Focus to "AUTO" (☞ pg. 31). • Clean the lens and check the focus again (☞ pg. 61).
8. The cassette will not load properly.	*8.* • The cassette is in the wrong position. • The battery's charge is low.	*8.* • Set it in the right position (☞ pg. 10). • Install a fully charged battery (☞ pg. 6).
9. Play, Rewind and Fast-Forward functions do not work.	*9.* • The Power Switch is not set to "PLAY".	*9.* • Set the Power Switch to "PLAY" (☞ pg. 36).
10. The tape is moving, but there is no picture.	***10.*** • Your TV has AV input terminals, but is not set to its VIDEO mode. • The cassette's cover is open.	***10.*** • Set the TV to the mode or channel appropriate for video playback (☞ pg. 40, 41). • Close the cassette's cover (☞ pg. 10).
11. Snapshot mode cannot be used.	***11.*** • The Squeeze mode is selected.	***11.*** • Disengage the Squeeze mode (☞ pg. 23).
12. Digital Zoom does not work.	***12.*** • 16X optical zoom is selected. • Picture Wipe or Dissolve are being used in a scene transition. • Snapshot was attempted during Digital Zoom.	***12.*** • Wait until the Picture Wipe or Dissolve effects are completed (☞ pg. 26). • Do not attempt to take a Snapshot when performing Digital Zoom (☞ pg. 20, 21).
13. Programme AE with special effects and Fade/Wipe Effects do not work.	***13.*** • The Power Switch is set to "AUTO".	***13.*** • Set the Power Switch to "PRO." (☞ pg. 25, 28).
14. The Black & White Fader does not work.	***14.*** • The Sepia or Monotone mode is activated.	***14.*** • Turn off Sepia and Monotone (☞ pg. 28).
15. The Dissolve function does not work.	***15.*** • The Sepia, Monotone or Slow Shutter mode of Programme AE with special effects is activated. • The Squeeze mode is selected. • The previously selected mode of Programme AE with special effects was changed after the last selected scene for editing was registered.	***15.*** • Turn off Sepia, Monotone or Slow before adding Dissolve to a scene transition (☞ pg. 28). • Make sure that the Squeeze mode in the Recording Menu is set to "OFF" (☞ pg. 22). • Make sure you have selected the mode of Programme AE with special effects you want before starting editing (☞ pg. 28).
16. Scene transition does not go as expected.	***16.*** • When using "Picture Wipe/Dissolve" (☞ pg. 26), there is a delay of a fraction of a second between the previous record stop-point and the Dissolve start-point. This is normal, but this slight delay becomes especially noticeable when shooting fast-moving subject or during rapid panning.	***16.***

CONTINUED ON NEXT PAGE

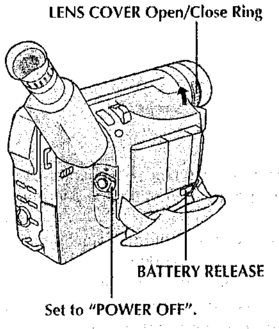
SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
17. The Picture Wipe and Dissolve functions do not work.	**17.** • The last selected editing scene is ending. • At the end of the last selected scene for editing, the Power Switch was set to "OFF". • The power is off.	**17.** • Select Picture Wipe or Dissolve before beginning recording. The effects are then automatically activated (☞ pg. 26). • Do not turn off the camcorder's power after setting Edit-In and Edit-Out points, as they will all be erased (☞ pg. 26). • The camcorder automatically shuts off after 5 minutes have elapsed in the Record-Standby mode. Make sure you continue operations within 5 minutes after engaging Record-Standby mode (☞ pg. 26).
18. The Picture Wipe function does not work.	**18.** • The Slow Shutter mode is activated. • The Squeeze or Cinema mode is selected in the Recording Menu.	**18.** • Make sure the Squeeze mode, Cinema mode, or Slow Shutter mode is not activated when preparing to use the Picture Wipe function (☞ pg. 26, 27).
19. Even when Slow Shutter is not selected, the image looks like it is activated.	**19.** • When shooting in the dark, the unit becomes highly sensitive to light and the image takes on an effect similar to Slow Shutter.	**19.** • If you want the lighting to look more natural, set GAIN UP to "AGC" or "OFF" in the Recording Menu (☞ pg. 22).
20. There is no strobe when the Classic Film or Strobe mode is activated.	**20.** • The Picture Wipe or Dissolve function is in use.	**20.** • Do not try to use the Classic Film or Strobe mode during a scene transition (☞ pg. 28).
21. White Balance cannot be activated.	**21.** • The Sepia or Monotone mode is activated.	**21.** • Turn off Sepia or Monotone before setting White Balance (☞ pg. 28).
22. When shooting a subject illuminated by bright light, vertical lines appear.	**22.** • This is a result of exceedingly high contrast, and is not a malfunction.	**22.** —
23. When the screen is under direct sunlight during shooting, the screen becomes red or black for an instant.	**23.** • This is not a malfunction.	**23.** —

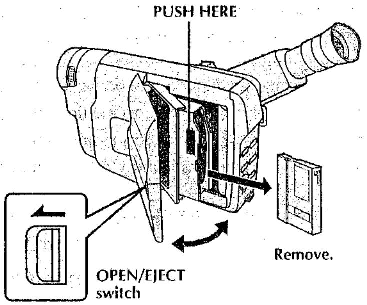
SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
24. During recording, the date/time does not appear.	**24.** • "DISPLAY" is set to "OFF" in the Date/Time Menu.	**24.** • Set "DISPLAY" to "ON" in the Date/Time Menu (☞ pg. 9). • Press **DISPLAY** for longer than 1 second to make the indicators appear (☞ pg. 15).
25. The indicators and messages do not appear on screen.	**25.** • "ON SCREEN" is set to "OFF" in the Date/Time Menu.	**25.** • Set "ON SCREEN" to "ON" in the Date/Time Menu (☞ pg. 19). • Press **DISPLAY** for longer than 1 second to make the indicators appear (☞ pg. 15).
26. The indicators do not appear.	**26.** • You have made the indicators disappear.	**26.** • Press **DISPLAY** for longer than 1 second to make the indicators appear (☞ pg. 15).
27. The viewfinder and the lens have become dirty (ex. fingerprints).	**27.** —	**27.** • Wipe them gently with soft cloth. Wiping strongly can cause damage.
28. The viewfinder indications blink.	**28.** • Certain Fade/Wipe effects, certain modes of Programme AE with special effects, Picture Stabilizer and other functions that cannot be used together are selected at the same time.	**28.** • Re-read the sections covering Fade/Wipe effects, Programme AE with special effects and Picture Stabilizer (☞ pg. 16, 25, 26, 28, 29).
29. Coloured bright spots appear all over the viewfinder.	**29.** • The viewfinder is made with high-precision technology. However, black spots or bright spots of light (red, green or blue) may appear constantly in the viewfinder. These spots are not recorded on the tape. This is not due to any defect of the unit. (Effective dots: more than 99.99 %)	**29.** —
30. An unusual mark appears.	**30.** —	**30.** • Check the section of the manual that explains viewfinder indications (☞ pg. 64, 65).

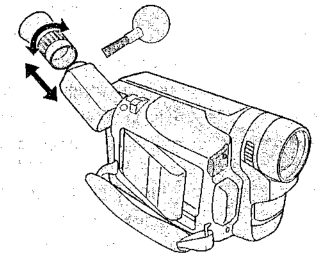
CONTINUED ON NEXT PAGE

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
31. An error indication (E01 — E06) appears.	*31.* • A malfunction of some kind has occurred. In this case the camcorder's functions become unusable.	*31.* • Remove the power supply (battery pack, etc.), clock battery and wait a few minutes for the indication to clear. When it does, you can resume using the camcorder. If the indication remains even though you repeat the above two or three times, please consult your nearest JVC dealer.
32. The charge indicator on the AC Power Adapter/ Charger does not light.	*32.* • The temperature of the battery is extremely high/low. • Charging is difficult in places subject to extremely high/low temperatures.	*32.* • To protect the battery, it is recommended to charge it in places with a temperature of 10°C to 35°C (☞ pg. 67).
33. The recording mode indicator "LP" blinks.	*33.* • This occurs when recording in the LP mode is not available. After the indicator blinks, the recording mode switches to "SP" and recording goes on.	*33.* —
34. Picture does not appear in the viewfinder.	*34.* • The lens cover is closed.	*34.* • Open the lens cover (☞ pg. 14).
35. When the image is printed from the printer, a black bar appears at the bottom of the screen.	*35.* • This is not a malfunction.	*35.* • By recording with Picture Stabilizer activated (☞ pg. 16) this can be avoided.
36. The power lamp blinks.	*36.* • The camcorder was turned on when the battery power was almost gone.	*36.* • Replace with a charged battery pack (☞ pg. 6)
37. There are disturbances in audio.	*37.* • If Audio Dubbing has been performed repeatedly on the same portion of the tape, disturbance to the sound may result.	*37.* • Use a new, or infrequently used, tape for Audio Dubbing (☞ pg. 54, 55).

USER MAINTENANCE







After Use

1 Set the Power Switch to "POWER OFF" to turn off the camcorder.

2 Press **OPEN/EJECT** in the direction of the arrow then swing the cover open until it locks. The cassette holder opens automatically. Remove the cassette.

3 Press "PUSH HERE" to close the cassette cover.

4 Slide **BATTERY RELEASE** to remove the battery pack.

5 Turn the **LENS COVER** Open/Close Ring to close the lens cover.

Cleaning The Camcorder

1 **CLEAN EXTERIOR**
Wipe gently with a soft cloth.

- Put cloth in diluted mild soap and wring it well to wipe off heavy dirt. Then wipe again with a dry cloth.

2 **CLEAN LENS**
Blow it with a blower brush, then wipe gently with lens cleaning paper.

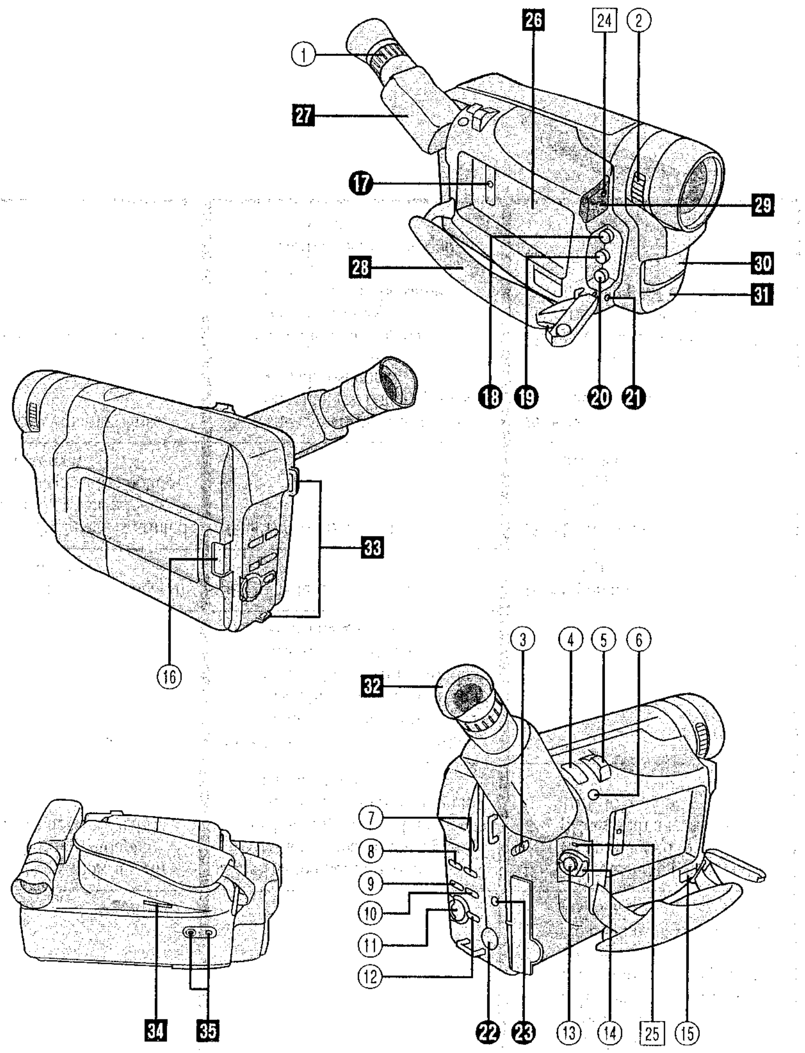
3 **REMOVE EYEPIECE**
Turn the eyepiece counterclockwise and pull it out.

4 **CLEAN VIEWFINDER**
Remove dust using a blower brush.

5 **RE-ATTACH EYEPIECE**
Re-attach the eyepiece and turn it clockwise.

NOTES:

- *Avoid using strong cleaning agents such as benzine or alcohol.*
- *Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.*
- *Mould may form if the lens is left dirty.*
- *When using a cleaner or chemically treated cloth refer to the cautions of each product.*
- *When removing the eyepiece, be sure to hold the viewfinder securely.*



Controls

① Dioptre Adjustment Control	☞ pg. 12
② Lens Cover Open/Close Ring	☞ pg. 14
③ Video Light Switch [LIGHT OFF/AUTO/ON]	☞ pg. 17
④ Snapshot Button [SNAPSHOT]	☞ pg. 20
⑤ Power Zoom Lever [T/W]	☞ pg. 16
⑥ Picture Stabilizer Button [P. STABILIZER]	☞ pg. 16
⑦ Fast-Forward Button [▶▶, FF]	☞ pg. 36
⑧ Rewind Button [◀◀, REW]	☞ pg. 36
⑨ Stop Button [■, STOP]	☞ pg. 36
⑩ Play/Pause Button [▶/❚❚, PLAY/PAUSE]	☞ pg. 36
⑪ Select Dial [+, –, PUSH]	☞ pg. 9, 22
⑫ MENU/DISPLAY Button	☞ pg. 15, 22
⑬ Recording Start/Stop Button	☞ pg. 14
⑭ Power Switch	☞ pg. 14, 36
⑮ Battery Release Switch [BATTERY RELEASE]	☞ pg. 6
⑯ OPEN/EJECT Switch	☞ pg. 10

Connectors

⓱ DC IN Jack	☞ pg. 7

The connectors ⓲ to ㉓ are located beneath the cover.

⓲ Video Output Connector	☞ pg. 40
⓳ Audio Output Connector [L]	☞ pg. 40
⓴ Audio Output Connector [R]	☞ pg. 40
㉑ External Stereo Microphone Input Connector [MIC]	☞ pg. 54
㉒ S-Video Output Connector [S OUT]	☞ pg. 40
㉓ J Terminal [JLIP (Joint Level Interface Protocol) Connector]	☞ pg. 49

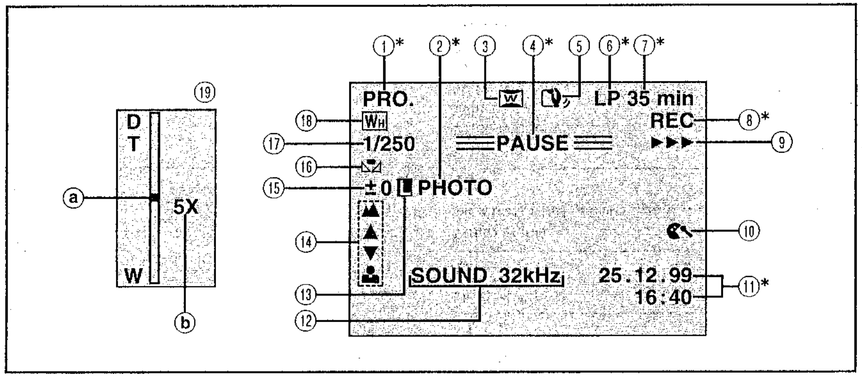
- Connect the editing cable when performing Random Assemble Editing (☞ pg. 48 – 53).
- It is used to connect the camcorder to a device such as a personal computer.
  For further details consult your nearest JVC dealer.
- JLIP-controlled editing from camcorder to VCR is not possible if the VCR is not equipped with a J terminal.

Indicators

24 Tally Lamp	☞ pg. 14
25 Power Lamp	☞ pg. 14

Other Parts

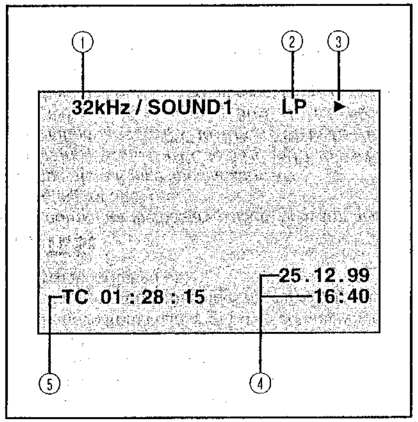
26 Battery Pack Mount	☞ pg. 6
27 Viewfinder	☞ pg. 12
28 Grip Strap	☞ pg. 12
29 • Camera sensor Be careful not to cover this area; a sensor necessary for shooting is built-in here.	
• Remote Sensor	☞ pg. 43
30 Video Light	☞ pg. 17
31 Stereo Microphone	☞ pg. 54
32 Eyepiece	☞ pg. 61
33 Shoulder Strap Eyelets	☞ pg. 13
34 Clock Battery Slot	☞ pg. 8
35 Tripod Mounting Socket	☞ pg. 13



Viewfinder Indications During Recording

No.	Function	
①*	Displays the operation mode position.	(☞ pg. 14)
②*	Appears when taking a Snapshot.	(☞ pg. 20)
③	Appears when in the Squeeze or Cinema mode.	(☞ pg. 23)
④*	Appears when in the Record-Standby mode.	(☞ pg. 14)
⑤	Appears when Picture Stabilizer is engaged.	(☞ pg. 16)
⑥*	Displays the recording mode (SP or LP).	(☞ pg. 11)
⑦*	Displays the tape remaining time.	(☞ pg. 15)
⑧*	Appears during recording.	(☞ pg. 14)
⑨	Appears while the tape is running.	(☞ pg. 14)
⑩	Appears when the wind cut mode is engaged to cut down on noise created by wind.	(☞ pg. 24)
⑪*	Displays the date/time.	(☞ pg. 19)
⑫	Displays the sound mode for approx. 5 seconds after turning on the camcorder.	(☞ pg. 24)
⑬	Appears when the iris is locked.	(☞ pg. 33)
⑭	Appears when the focus is adjusted manually.	(☞ pg. 31)
⑮	Appears when the exposure is adjusted.	(☞ pg. 32)
⑯	Appears when the white balance is adjusted.	(☞ pg. 35)
⑰	Displays the selected Programme AE with special effects.	(☞ pg. 29)
⑱	Displays the selected Fade/Wipe effect.	(☞ pg. 27)
⑲	Appears during zooming. ⓐ Zoom level indicator ⓑ Approximate zoom ratio	(☞ pg. 16)

* :Pressing **DISPLAY** for longer than 1 second lets you remove indications marked with * from the screen.



Viewfinder Indications During Playback

No.	Function	
①	Displays the sound mode.	(☞ pg. 39)
②	Displays the recording mode.	
③	Appears while a tape is running. ▶ : Playback ▶▶ : Fast-Forward/Shuttle search ◀◀ : Rewind/Shuttle search ❚❚ : Pause ❚❚▶ : Forward slow-motion ◀❚❚ : Reverse slow-motion ⊖ : Audio Dubbing	
④	Displays the date/time.	(☞ pg. 39)
⑤	Displays the time code.	(☞ pg. 39)

Warning Indications

Indications	Function
▮▮▮	Displays the battery remaining power. Remaining power level: high ——— ▮▮▮→▮▮→▮→▭ Remaining power level: exhausted ——— As the battery power comes close to nil, the battery indicator ▭ blinks. When the battery power is exhausted, power turns off automatically.
▭●	Appears when no tape is loaded, or when the erase protection tab is set to "SAVE". (☞ pg. 10)
⊗	Appears if dirt is detected on the heads during recording. (☞ pg. 68)
💧	Appears if condensation occurs. When this indication is displayed, the camcorder turns off automatically.
⌧	Appears for approx. 10 seconds after power is turned on. Also blinks when the clock (lithium) battery is either not installed or has discharged. Install or replace the old battery with a new one. (☞ pg. 8)
LENS COVER	Blinks for approx. 5 seconds when power is turned on with the lens cover closed. (☞ pg. 14)
TAPE!	Appears for 10 seconds after power is turned on if there is no tape loaded.
TAPE END	Appears when the tape ends during recording or playback. (☞ pg. 15)
SET DATE/TIME!	• Appears when the date/time is not set. (☞ pg. 9) • Appears when the clock (lithium) battery is discharged and the previously set date/time is erased. (☞ pg. 9)
E01 — E06	The error indications (E01 — E06) show what type of malfunction has occured. When an error indication appears, the camcorder turns off automatically. Remove the power supply (battery, etc.), clock battery and wait a few minutes for the indication to clear. When it does, you can resume using the camcorder. If the indication remains, consult your nearest JVC dealer. (☞ pg. 60)
ERROR! REFER MANUAL	Appears when Audio Dubbing is unavailable. (☞ pg. 54)

INDEX Terms

A

AC Power Adapter/Charger ☞ pg. 6, 7
Audio Dubbing ☞ pg. 54
Auto Focus ☞ pg. 30
Auto Shut off ☞ pg. 15, 36

B

Battery Low ☞ pg. 65
Battery Pack ☞ pg. 6, 7, 67

C

Car Battery ☞ pg. 7
Charge Marker ☞ pg. 7
Charge The Battery Pack ☞ pg. 6
Cinema ☞ pg. 23
Classic Film ☞ pg. 29
Clean The Camcorder ☞ pg. 61
Clock (Lithium) Battery ☞ pg. 8
Connections ☞ pg. 7, 40, 49

D

Date/Time Display ☞ pg. 19, 39
Date/Time Settings ☞ pg. 9
Demonstration Mode ☞ pg. 24
Digital Zoom ☞ pg. 23
Discharge The Battery Pack ☞ pg. 6
Dioptre Adjustment ☞ pg. 12
Dubbing ☞ pg. 42

E

Exposure Control ☞ pg. 32

F

Fade-In/Out ☞ pg. 25
Fast-Forward The Tape ☞ pg. 36

G

Gain Up ☞ pg. 23
Grip Adjustment ☞ pg. 12

I

Iris ☞ pg. 33
Iris Lock ☞ pg. 33

L

Load A Tape ☞ pg. 10

M

Manual Focus ☞ pg. 31
Monotone ☞ pg. 29
Motor Drive Mode ☞ pg. 21

P

Picture Stabilizer ☞ pg. 16
Picture Wipe/Dissolve ☞ pg. 26
Playback Menu ☞ pg. 38
Playback Special Effects ☞ pg. 47
Playback Zoom ☞ pg. 46
Power Switch Position ☞ pg. 14
Programme AE With Special Effects ☞ pg. 28
Provided Accessories ☞ pg. 3

R

Random Assemble Editing ☞ pg. 48 – 53
Record Safety Tab ☞ pg. 10
Record-Standby ☞ pg. 14
Recording Format ☞ pg. 4
Recording Mode ☞ pg. 11
Recording Menu ☞ pg. 22, 23
Remote Control ☞ pg. 43
Rewind The Tape ☞ pg. 36

S

Sepia ☞ pg. 29
Set Remote Control/VCR Code ☞ pg. 48
Shoulder Strap Attachment ☞ pg. 13
Shuttle Search ☞ pg. 37
Shutter Speed ☞ pg. 29
Slow-Motion Playback ☞ pg. 45
Slow Shutter ☞ pg. 29
Snapshot Mode ☞ pg. 20, 21
Sound Mode ☞ pg. 24
Specifications ☞ pg. 69
Squeeze ☞ pg. 23
Still Playback ☞ pg. 37
Strobe ☞ pg. 29
System Menu ☞ pg. 24

T

Tally ☞ pg. 24
Tele Macro ☞ pg. 23
Time Code ☞ pg. 4, 18
Tripod Mounting ☞ pg. 13
Twilight ☞ pg. 29

U

Unload A Tape ☞ pg. 10

V

Video Light ☞ pg. 17
Viewfinder Indications ☞ pg. 64, 65

W

White Balance ☞ pg. 34, 35
Wide Mode ☞ pg. 23
Wind Cut ☞ pg. 24
Wipe In/Out ☞ pg. 25, 26

Z

Zooming ☞ pg. 16

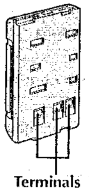
CAUTIONS

DANGER:

Video Light

- The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot for some time.
- When operating, keep a distance of about 30 cm between the video light and people or object.
- Do not use near flammable or explosive materials.
- It is recommended that you consult your nearest JVC dealer for replacing the video light.

Battery Packs



The battery packs are nickel-cadmium or nickel metal-hydride batteries. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

1. To avoid hazard . . .
... **do not** burn.
... **do not** short-circuit the terminals.
... **do not** modify or disassemble.
... use only specified chargers.

2. To prevent damage and prolong service life . . .
... **do not** subject to unnecessary shock.
... avoid repeated charging without fully discharging.
... charge in an environment where temperatures are within the tolerances shown in the chart below. This is a chemical reaction type battery—cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
... avoid prolonged uncharged storage.
... remove from charger or powered unit when not in use, as some machines use current even when switched off.

NOTES:

- *It is normal for the battery pack to be warm after charging, or after use.*
  Temperature Range Specifications
  Charging .... 10°C to 35°C (50°F to 95°F)
  Operation .... 0°C to 40°C (32°F to 104°F)
  Storage .... –10°C to 30°C (14°F to 86°F)
- *Recharging time is based on room temperature of 20°C (68°F).*
- *The lower the temperature, the longer recharging takes.*

Cassettes

To properly use and store your cassettes, be sure to read the following cautions:

1. During use . . .
... make sure the cassette bears the Mini DV mark.
... be aware that recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
... make sure the cassette is positioned properly when inserting.
... do not load and unload the cassette repeatedly without allowing the tape to run at all. This slackens the tape and can result in damage.
... do not open the front tape cover. This exposes the tape to fingerprints and dust.

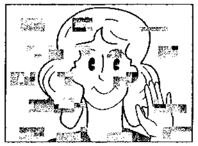
2. Store cassettes . . .
... away from heaters or other heat sources.
... out of direct sunlight.
... where they won't be subject to unnecessary shock or vibration.
... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).
... vertically, in their original cases.

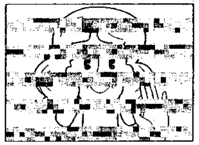
Main Unit

1. For safety, DO NOT . . .
... open the camcorder's chassis.
... disassemble or modify the unit.
... short-circuit the terminals of the battery pack. Keep it away from metallic objects when not in use.
... allow inflammables, water or metallic objects to enter the unit.
... remove the battery pack or disconnect the power supply while the power is on.
... leave the battery pack attached when the camcorder is not in use.

2. Avoid using the unit . . .
... in places subject to excessive humidity or dust.
... in places subject to soot or steam such as near a cooking stove.
... in places subject to excessive shock or vibration.
... near a television set.
... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
... in places subject to extremely high (over 40°C or 104°F) or extremely low (under 0°C or 32°F) temperatures.

3. **DO NOT leave the unit . . .**
   - ... in places of over 50°C (122°F).
   - ... in places where humidity is extremely low. (below 35%) or extremely high (above 80%).
   - ... in direct sunlight.
   - ... in a closed car in summer.
   - ... near a heater.
4. **To protect the unit, DO NOT . . .**
   - ... allow it to become wet.
   - ... drop the unit or strike it against hard objects.
   - ... subject it to shock or excessive vibration during transportation.
   - ... keep the lens directed at extremely bright objects for long periods.
   - ... direct the eyepiece of the viewfinder at the sun.
   - ... carry it by holding the viewfinder. Be sure to hold the main unit with both hands or use the grip.
   - ... swing it excessively when using the shoulder strap.
5. **Dirty heads can cause the following problems:**





- No picture and sound during playback (blue back screen).
- Blocks of noise appear during playback.
- During recording, the Head Clog Warning indicator "⊗" appears.

In such cases, use the optional Cleaning Cassette. Insert it and play back. If the cassette is used more than once consecutively, damage to the video heads may result. After the camcorder plays back for about 20 seconds, it stops automatically. Also refer to the Cleaning Cassette's instructions.
If, after using the Cleaning Cassette, the problems still exist, consult your nearest JVC dealer.
Mechanical moving parts used to move the video heads and video tape tend to become dirty and worn out over time. In order to maintain a clear picture at all times, periodic check-ups are recommended after using the unit for about 1,000 hours. For periodic check-ups please consult your nearest JVC dealer.

About moisture condensation . . .

- You may have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

SPECIFICATIONS

Camcorder

General

Power supply	: DC 6.0 V⎓
Power consumption	
Light on	: Approx. 8.0 W
Light off	: Approx. 5.0 W
Format	: DV Format (SD mode)
Signal format	: PAL Standard
Video signal recording format	: Digital Component Recording
Cassette	: Mini DV Cassette
Tape Speed	: SP: 18.8 mm/s LP: 12.5 mm/s
Maximum recording time	: SP: 60 min. LP: 90 min. (using M-DV60ME cassette)
Pickup	: 1/4" CCD
Lens	: F1.6, f = 3.9 to 62.4 mm, 16:1 Power Zoom Lens
Filter diameter	: ø40.5 mm
Viewfinder	: Electronic viewfinder with 0.55" colour LCD
Operating temperature	: 0°C to 40°C
Operating humidity	: 35% to 80%
Storage temperature	: –20°C to 50°C
Dimensions	: 89 (W) x 119 (H) x 198 (D) mm (with the viewfinder fully tilted downward)
Weight	: Approx. 640 g

Connectors

S-Video	: Y: 1Vp-p, 75 Ω, analogue output C: 0.29 Vp-p, 75 Ω, analogue output
JLIP	: ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Video	: 1 Vp-p, 75 Ω unbalanced, analogue output (via Video output connector)
Audio	: –8 dBs, 1 kΩ analogue output (via Audio output connector)
External microphone input	: –68 dBs, high impedance unbalanced with ø3.5 mm (stereo)

AC Power Adapter/Charger AA-V15EG

Power requirement	: AC 110 V to 240 V~, 50/60 Hz
Power consumption	: 23 W
Output	
Charge	: DC 8.5 V⎓, 1.3 A
VTR	: DC 6.3 V⎓, 1.8 A
Charging system	: Constant current, peak detection, timer controlled
Dimensions	: 140 (W) x 42 (H) x 68 (D) mm
Weight	: Approx. 300 g

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

SECTION 1
DISASSEMBLY

1.1 SERVICE CAUTIONS

1.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistor, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others.
5. When removing ICs, be careful not to damage circuit patterns.
6. Tighten screws properly during the procedures. Unless specified otherwise, tighten screws at torque of 0.2 N•m (2.0 kgf•cm).

1.1.2 How to read the disassembly and assembly

(For Cabinet Parts)

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	4(S1)	<NOTE 1>
②	UPPER CASE	C2	2(S2), (L1), (L2)	<NOTE 2>
③	COVER (VF)	C3	2(S2),(L3)	–
④	TOP COVER	C4	2(S2), 2(L4), 2(L5), 2(L6)	<NOTE 3>

↑ ① ↑ ② ↑ ③ ↑ ④ ↑ ⑤

① : Order of steps in Procedure
When reassembling, preform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

② : Part to be removed or installed.

③ : Fig. No. showing Procedure or Part Location.

C = Cabinet
CA = Camera
D = Deck

④ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.
2(S2) = 2 Screws (S2)

⑤ : Adjustment information for installation.

1.1.3 Connection of the wires

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

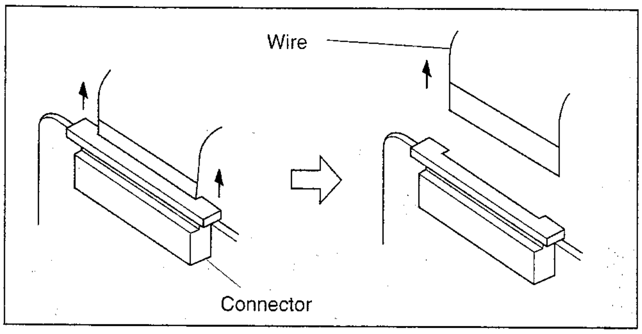


Fig. 1-1-1

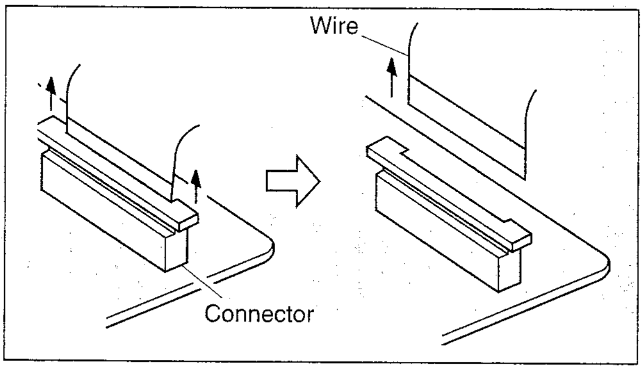
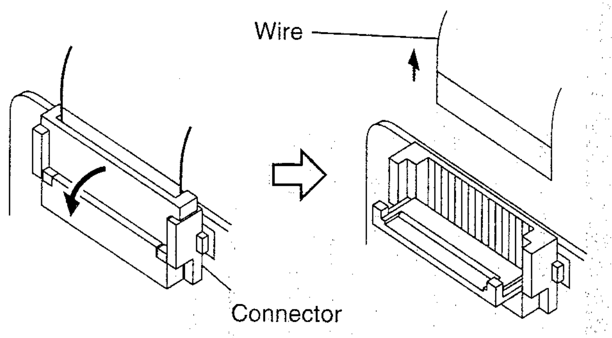


Fig. 1-1-2



NOTE: *After removing the wire, return the stopper to its original position, because it is apt to come off if it is left open.*

Fig. 1-1-3

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to those shown in figures of this section "Disassembly".

Note: *Screws that are asterisked (marked with* ∗ *) in the shape column are fixed with screw lock agent. If such the screw is once removed, never use it again.*

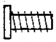
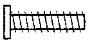
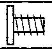
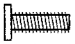
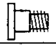
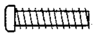
SYMBOL	SHAPE	PARTS NO.
(S1)	*	LY30018-008A
(S2)		QYSLSF2055D
(S3)		QYSLSF2090D
(S4)		QYSLSP2030D
(S5)		YQ43762-5
(S6)		LY30018-050A
(S7)		YQ43893-3
(S8)		LY30019-014A
(S9)		QYSPSGU2080Z

Table 1-1-1

1.2 TOOLS REQUIRED FOR ADJUSTMENTS

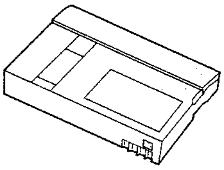
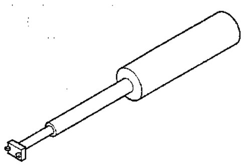
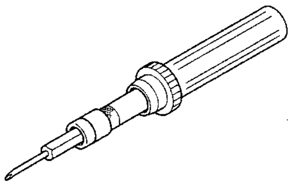
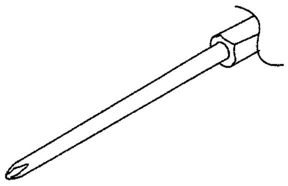
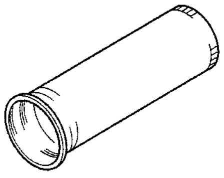
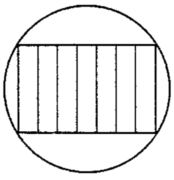
1 ALIGNMENT TAPE MC-2	2 GUIDE DRIVER YTU94085
	
3 TORQUE DRIVER YTU94088	4 BIT YTU94088-003
	
5 INF ADJUSTMENT LENS YTU92001B	6 COLOR BAR CHART YTU92001-051
	

Table 1-2-1

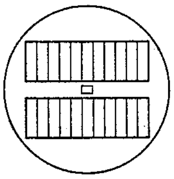
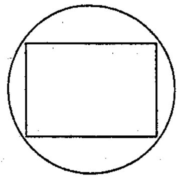
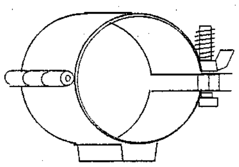
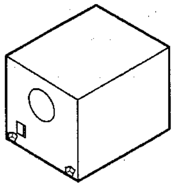
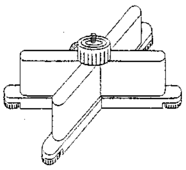
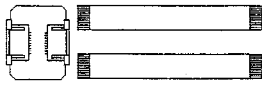
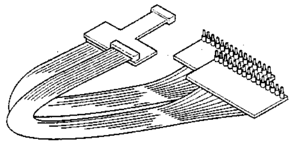
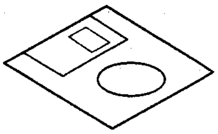
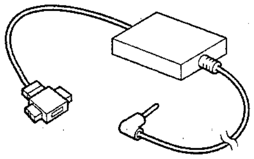
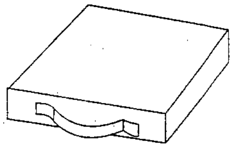
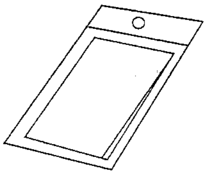
7 GRAY SCALE CHART YTU92001-052	8 WHITE BALANCE CHART YTU92001-053
	
9 INF LENS HOLDER YTU94087	10 LIGHT BOX YTU93072A-1
	
11 CAMERA STAND YTU93079	12 PATCH CORD YTU93094A
	
13 JIG CONNECTOR CABLE YTU93082C	14 SERVICE SUPPORT SOFTWARE YTU94057-34
	
15 PC CABLE QAM0099-002	16 SOLDERING KIT YTU96016C
	
17 CLEANING CLOTH KSMM-01	
	

Table 1-2-2

1. Alignment tape
To be used for check and adjustment of interchangeability of the mechanism.
(Video: Color bar signal, Audio: Non-signal)

2. Guide driver
To be used to turn the guide roller for adjustment of the linearity of playback envelope

3. Torque driver
Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.

4. Bit
This bit is slightly longer than those set in conventional torque drivers.

5. INF adjustment lens
To be used for adjustment of the camera system.

6. Color bar chart
To be used for adjustment of the camera system.

7. Gray scale chart
To be used for adjustment of the camera system.

8. White balance chart
To be used for adjustment of the camera system. (for white balance adjustment)

9. INF lens holder
To be used together with the camera stand (11) for operating the VideoMovie in the stripped-down condition such as the status without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring.

10. Light box
To be used for adjustment of the camera system.

11. Camera stand
To be used together with the INF adjustment lens holder.

12. Patch cord
To be used to connect electrical parts, P.C. boards, etc. for servicing.

13. JIG connector cable
Connected to CN105 of the main board and used for measuring error rates, etc.

14. Service support software
To be used for adjustment with a personal computer.

15. PC cable
To be used to connect the VideoMovie and a personal computer with each other when a personal computer is used for adjustment.

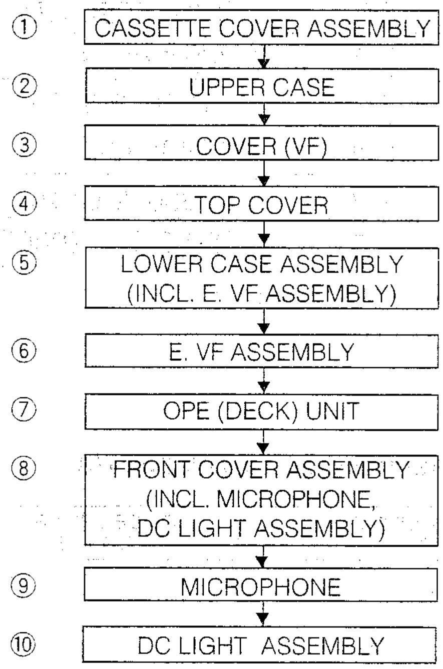
16. Soldering kit
Thin head is made so that it can be inserted into small spaces.

17. Cleaning cloth
Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

1.3 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and board assembly in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.

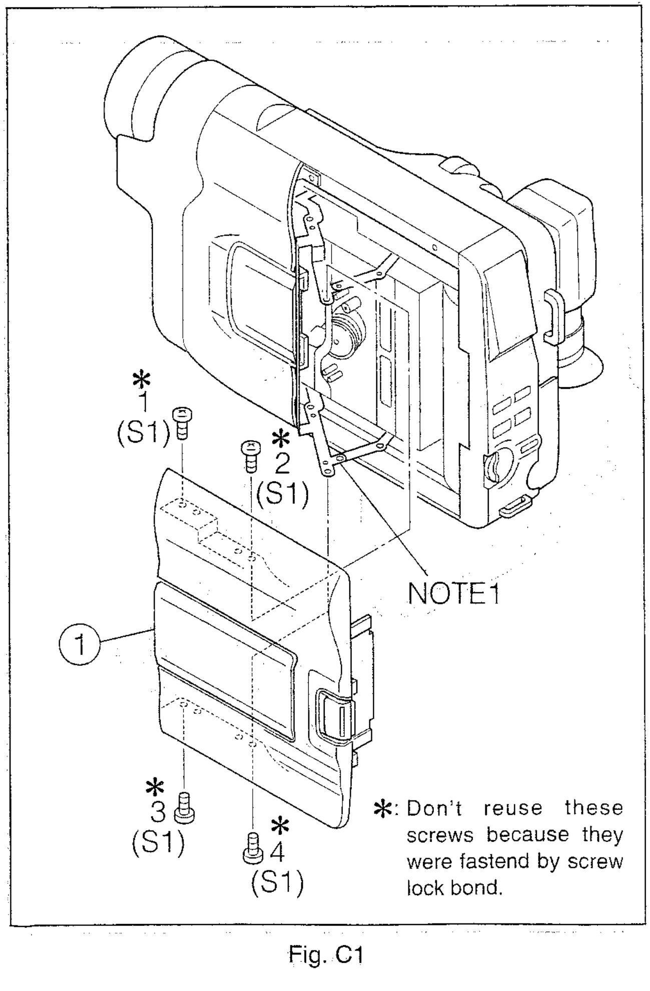

① CASSETTE COVER ASSEMBLY
② UPPER CASE
③ COVER (VF)
④ TOP COVER
⑤ LOWER CASE ASSEMBLY (INCL. E. VF ASSEMBLY)
⑥ E. VF ASSEMBLY
⑦ OPE (DECK) UNIT
⑧ FRONT COVER ASSEMBLY (INCL. MICROPHONE, DC LIGHT ASSEMBLY)
⑨ MICROPHONE
⑩ DC LIGHT ASSEMBLY

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	4(S1)	<NOTE 1>
②	UPPER CASE	C2	2(S2), (L1), 2(L2)	–
③	COVER (VF)	C3	2(S2), (L3)	–
④	TOP COVER	C4	2(S2),2(L4), 2(L5), 2(L6)	–
⑤	LOWER CASE ASSEMBLY (INCL. E.VF ASSEMBLY)	C5	9(S2),3(S3),(S4),(L7),(L8) (L9),(L10),(L11),2(L12) *CONNECTOR Ⓐ, Ⓑ, Ⓒ CAP (RCA JACK) COVER (JIG)	<NOTE 2> <NOTE 3> <NOTE 4>
⑥	E. VF ASSEMBLY	C6	2(S2)	–
⑦	OPE (DECK) UNIT	C7	2(S2), (L13), (L14), (L15) *CONNECTOR Ⓓ CAP (REAR JACK)	<NOTE 4>
⑧	FRONT COVER ASSEMBLY (INCL. MIC DC LIGHT ASSEMBLY)	C8	(S5), (S2), (L16), (L17) *CONNECTOR Ⓔ	<NOTE 4> <NOTE 5>
⑨	MICROPHONE		(S2)	<NOTE 5>
⑩	DC LIGHT ASSEMBLY		2(L18)	–

List of Abbreviations:

4(S1)=4 Screw (S1)
2(L2)=2 Locking Tabs (L2)



*: Don't reuse these screws because they were fastend by screw lock bond.

Fig. C1

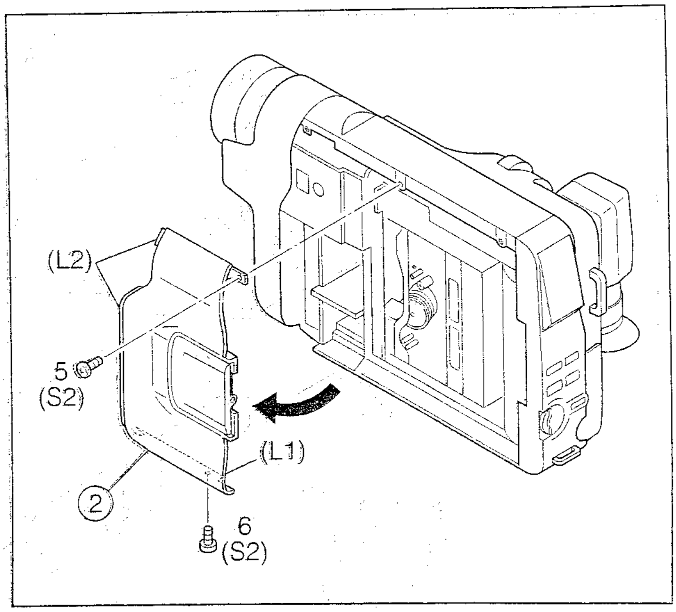


Fig. C2

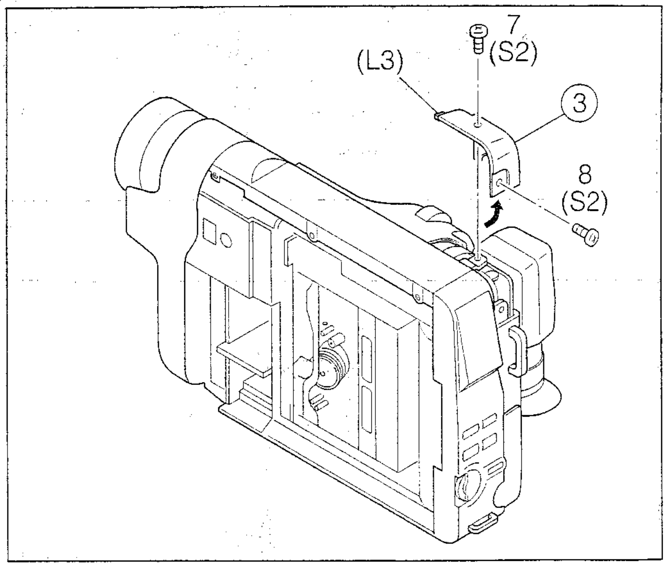


Fig. C3

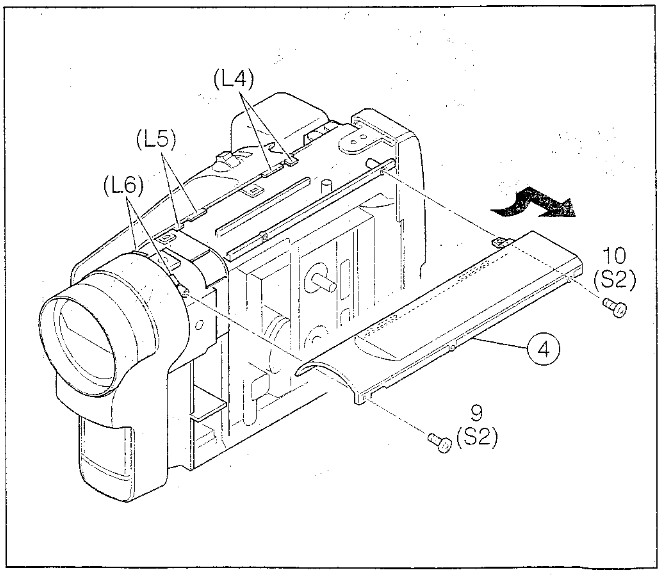


Fig. C4

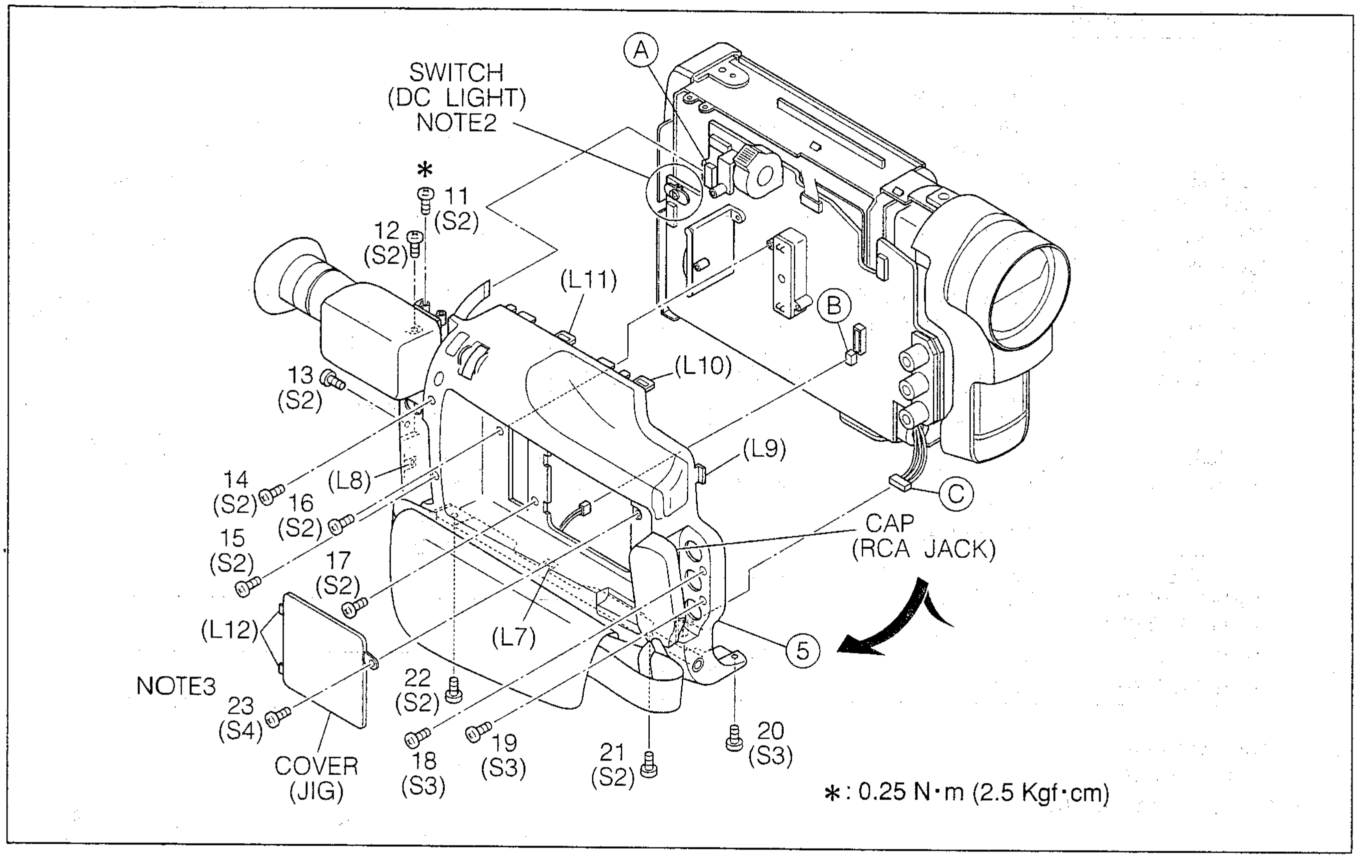

A
SWITCH
(DC LIGHT)
NOTE2
*
11
(S2)
12
(S2)
(L11)
B
13
(S2)
(L10)
(L9)
14
(S2)
(L8)
16
(S2)
C
CAP
(RCA JACK)
15
(S2)
17
(S2)
(L12)
(L7)
5
NOTE3
22
(S2)
23
(S4)
20
(S3)
19
(S3)
21
(S2)
COVER
(JIG)
18
(S3)
*: 0.25 N·m (2.5 Kgf·cm)

Fig. C5

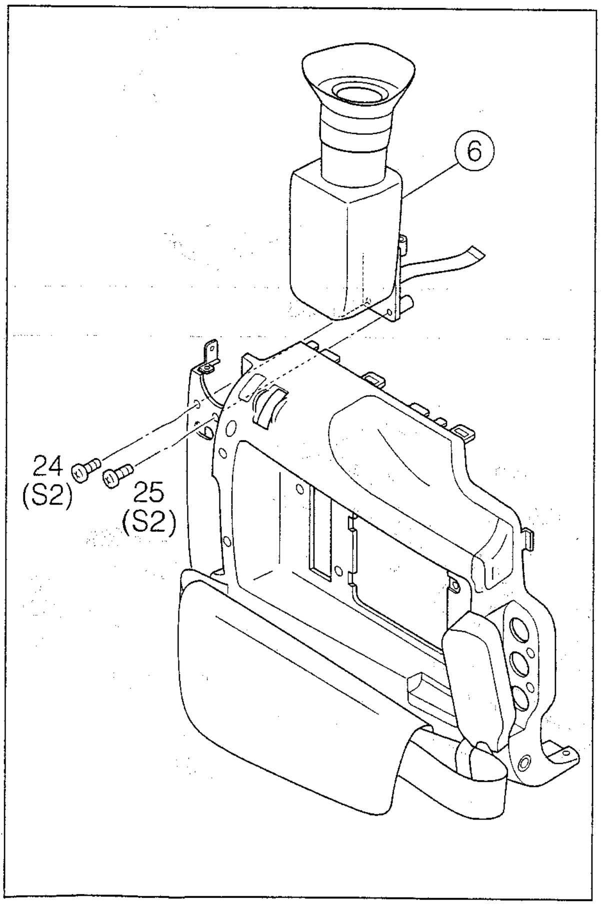


Fig. C6

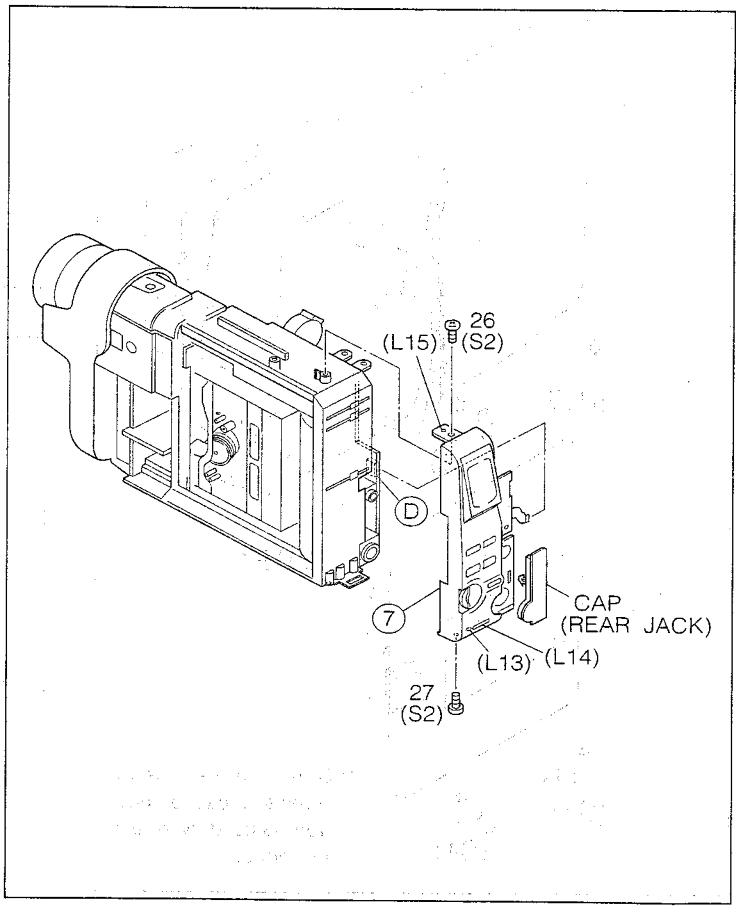

26
(S2)
(L15)
D
7
CAP
(REAR JACK)
(L13)
(L14)
27
(S2)

Fig. C7

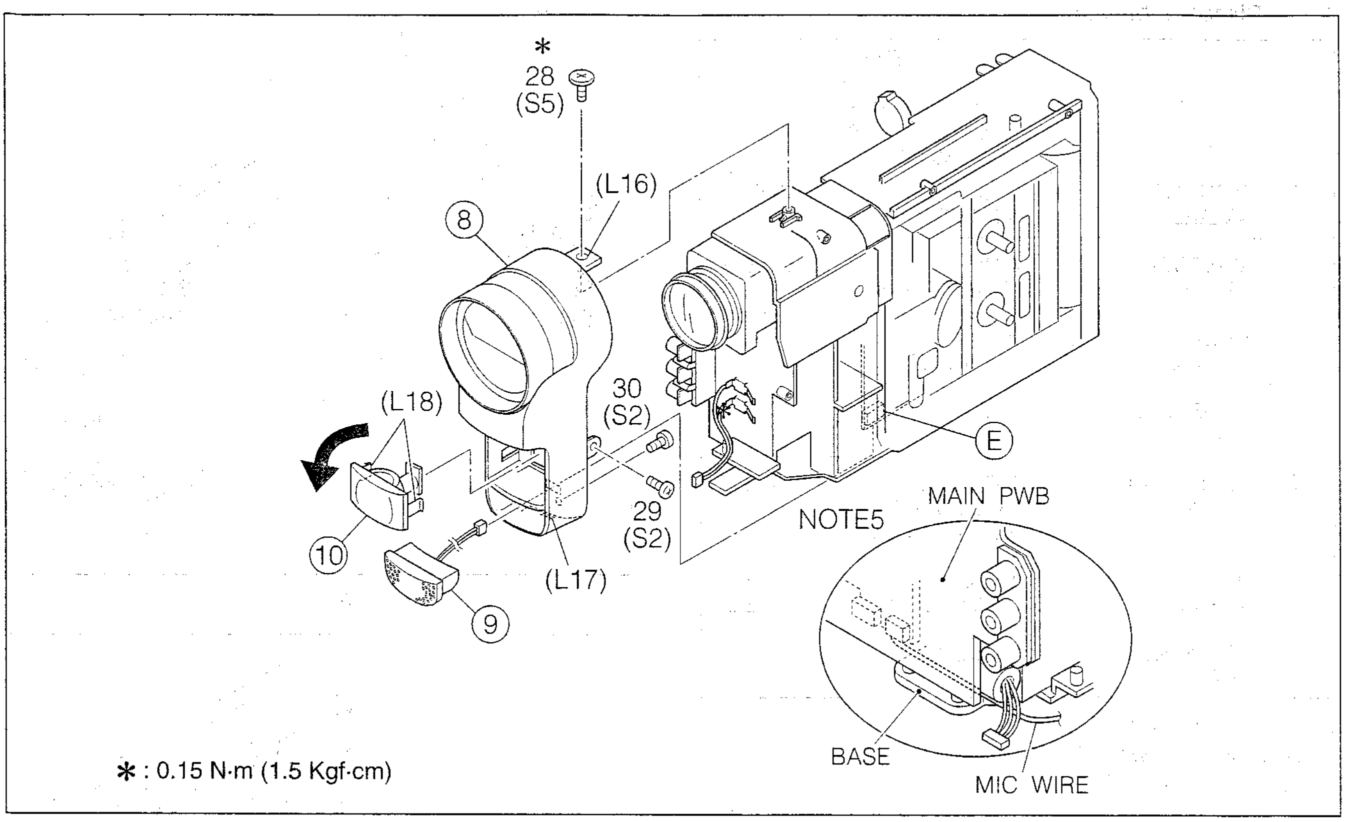

*
28
(S5)
(L16)
8
30
(S2)
(L18)
29
(S2)
10
9
(L17)
E
MAIN PWB
NOTE5
BASE
MIC WIRE
* : 0.15 N·m (1.5 Kgf·cm)

Fig. C8

Reference Notes:

<NOTE 1>
After removing the cassette cover, restore the arm assy to its original state.

<NOTE 2>
When removing the LOWER CASE assembly, pay careful attention to the knob of the switch (DC LIGHT) to get it neither damaged nor lost.

<NOTE 3>
When removing the door case together with the cover jig, it is not required to remove the screw of No. 23.

<NOTE 4>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⟷ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	20	EVF ⇔ MAIN CN104
Ⓑ	2	LITHIUM ↔ MAIN CN111
Ⓒ	5	MIC JACK CN1 ↔ SECOND CN303
Ⓓ	10	OPE (DECK) ⇔ MAIN CN110
Ⓔ	3	MIC ↔ SECOND CN302

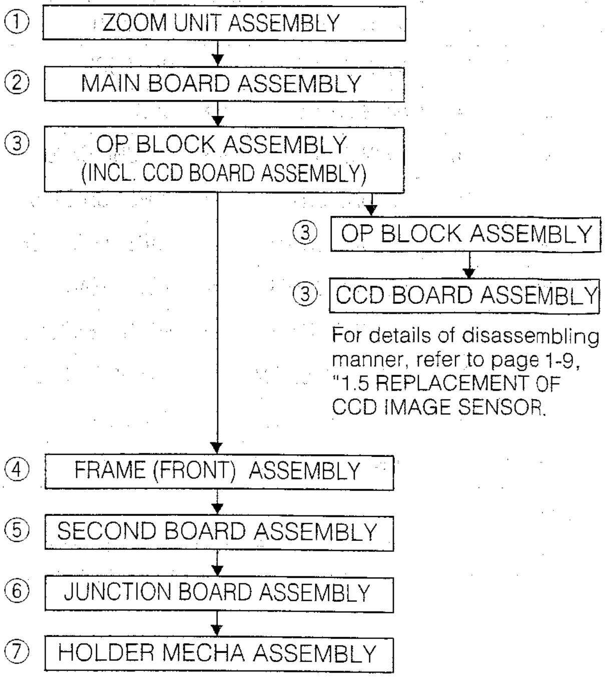
<NOTE 5>
Arrange the microphone wire so as to pass it between the MAIN board and the base.

1.4 DISASSEMBLING/REASSEMBLING CAMERA SECTION AND DECK SECTION

1.4.1 Flowchart of disassembling

The following flowchart shows the disassembling order of the camera section and deck section. When reassembling the camera section and deck section, follow this flowchart in the reverse order.

<Camera section/Deck section>


① ZOOM UNIT ASSEMBLY
② MAIN BOARD ASSEMBLY
③ OP BLOCK ASSEMBLY (INCL. CCD BOARD ASSEMBLY)
③ OP BLOCK ASSEMBLY
③ CCD BOARD ASSEMBLY
④ FRAME (FRONT) ASSEMBLY
⑤ SECOND BOARD ASSEMBLY
⑥ JUNCTION BOARD ASSEMBLY
⑦ HOLDER MECHA ASSEMBLY

For details of disassembling manner, refer to page 1-9, "1.5 REPLACEMENT OF CCD IMAGE SENSOR.

1.4.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	ZOOM UNIT ASSEMBLY	D1	3(S2) *CONNECTOR Ⓕ	<NOTE 1>
②	MAIN BOARD ASSEMBLY	D2	4(S2) *CONNECTOR Ⓖ,Ⓗ,Ⓙ,Ⓚ	<NOTE 1>
③	OP BLOCK ASSEMBLY	D3	2(S6) CUSHION (OP)	–
④	FRAME (FRONT) ASSEMBLY	D4	4(S2)	–
⑤	SECOND BOARD ASSEMBLY		2(S7), (L1), 2(L2) SHILD COVER (2) *CONNECTOR Ⓛ,Ⓜ,Ⓝ,Ⓞ	<NOTE 1>
⑥	JUNCTION BOARD ASSEMBLY		(S2), (L3) *CONNECTOR Ⓟ,Ⓠ,Ⓡ	<NOTE 1> <NOTE 2>
⑦	HOLDER MECHA ASSEMBLY		2(S8), 2(L4)	

List of Abbreviations:
3(S2) = 3 Screws (S2)
(L3) = 1 Locking Tab (L3)

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⟷ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓕ	14	MAIN CN109 ⇔ ZOOM UNIT
Ⓖ	2	MAIN CN108 ↔ DC LIGHT
Ⓗ	22	MAIN CN107 ⇔ OP BLOCK
Ⓙ	14	MAIN CN106 ⇔ CCD
Ⓚ	100	MAIN CN101 ⟷ SECOND CN301
Ⓛ	35	SECOND CN401 ⇔ JUNCTION CN501
Ⓜ	18	SECOND CN402 ⇔ CAPSTAN MOTOR
Ⓝ	8	SECOND CN404 ⇔ VIDEO HEAD
Ⓞ	6	SECOND CN403 ⇔ ROTARY ENCODER
Ⓟ	6	JUNCTION CN504 ⇔ LOADING MOTOR
Ⓠ	11	JUNCTION CN503 ⇔ DRUM MOTOR
Ⓡ	15	JUNCTION CN502 ⇔ SENSOR

<NOTE 2>
Be very careful not to damage the EJECT switch on the JUNCTION board in disassembling and reassembling.

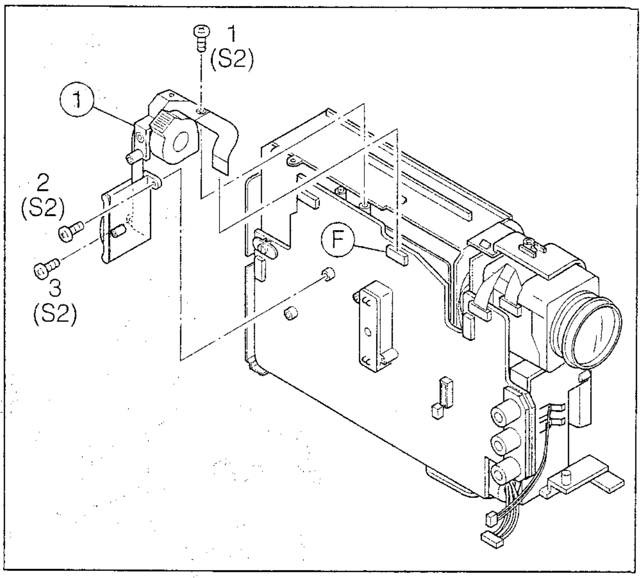


Fig. D1

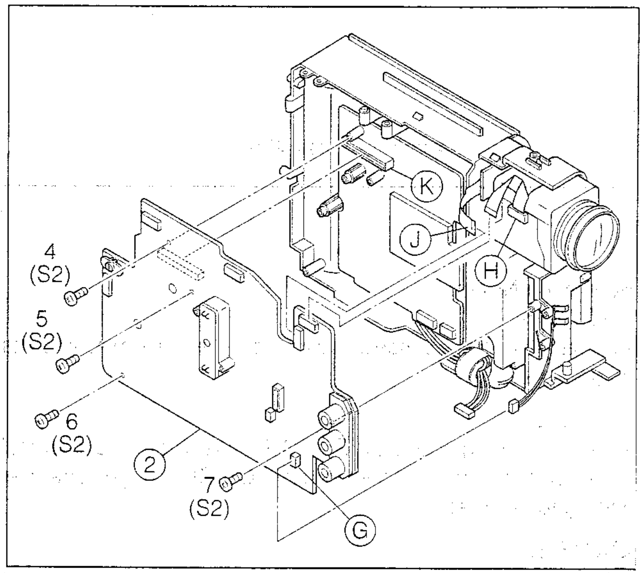


Fig. D2

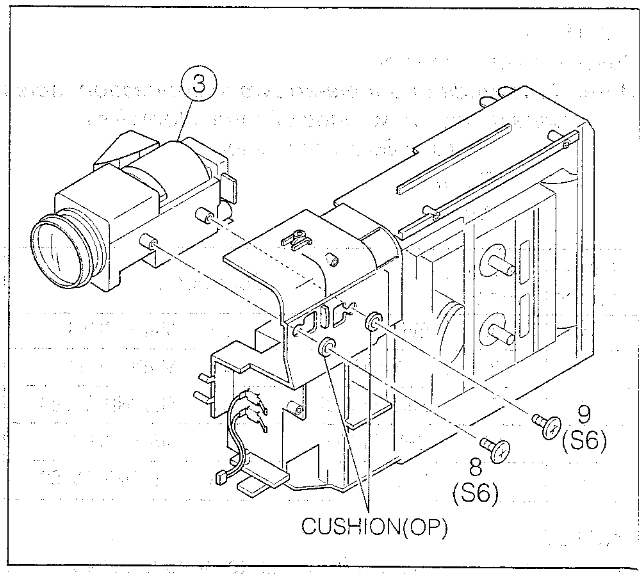
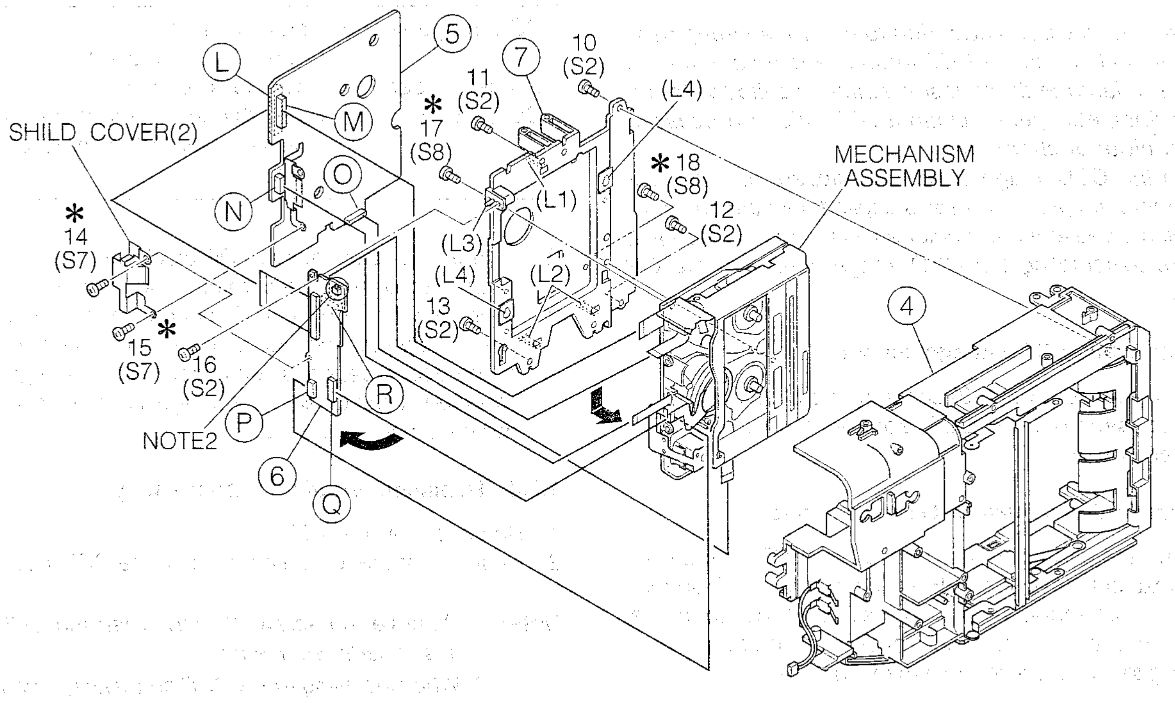


Fig. D3


L
5
M
7
10
(S2)
11
(S2)
*
17
(S8)
(L4)
SHILD COVER(2)
O
N
(L1)
MECHANISM
ASSEMBLY
*18
(S8)
12
(S2)
*
14
(S7)
(L3)
(L4)
(L2)
13
(S2)
4
15
(S7)
*
16
(S2)
R
P
NOTE2
6
Q

* : 0.07 N·m (0.7 Kgf·cm)

Fig. D4

1.5 REPLACEMENT OF CCD IMAGE SENSOR

Notes:

- *Pay the most careful attention to the transparent glass and optical LPF of the CCD image sensor so a not the soil and damage them. If something is soiled with finger-prints, etc., gently clean it with silicon-processed paper/cloth or chamois.*
- *When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.*

1.5.1 Removal of CCD image sensor

1. Remove two screws (1, 2) securing the CCD base assy, and disassemble the CCD spacer, the optical LPF, spacer rubber.

1.5.2 Installation of new CCD image sensor

1. Remove the protection seal from a new CCD image sensor. Next, put the optical LPF, spacer rubber, CCD spacer on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item refering to the following table (see Fig. 1-5-1).

Part Name	Orientation
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ.
Spacer rubber	IC side is horizontal.
Optical LPF	The thicker element next to blue glass is set in the direction of the arrow ⓐ.

2. Fix the CCD base assy to OP block with the two screws (1, 2). At that time, be careful of the orientation.
3. After completion of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.

1.5.3 Replacement of CCD board assy

1. Remove one screw (3).
2. Unsolder at the fourteen points on the CCD board assy.

Note: *1. Remove the screw (3) only when the CCD board assy needs replacement.*
2. When installing a new CCD board assy, carry out the above-mentioned procedure in the reverse order.

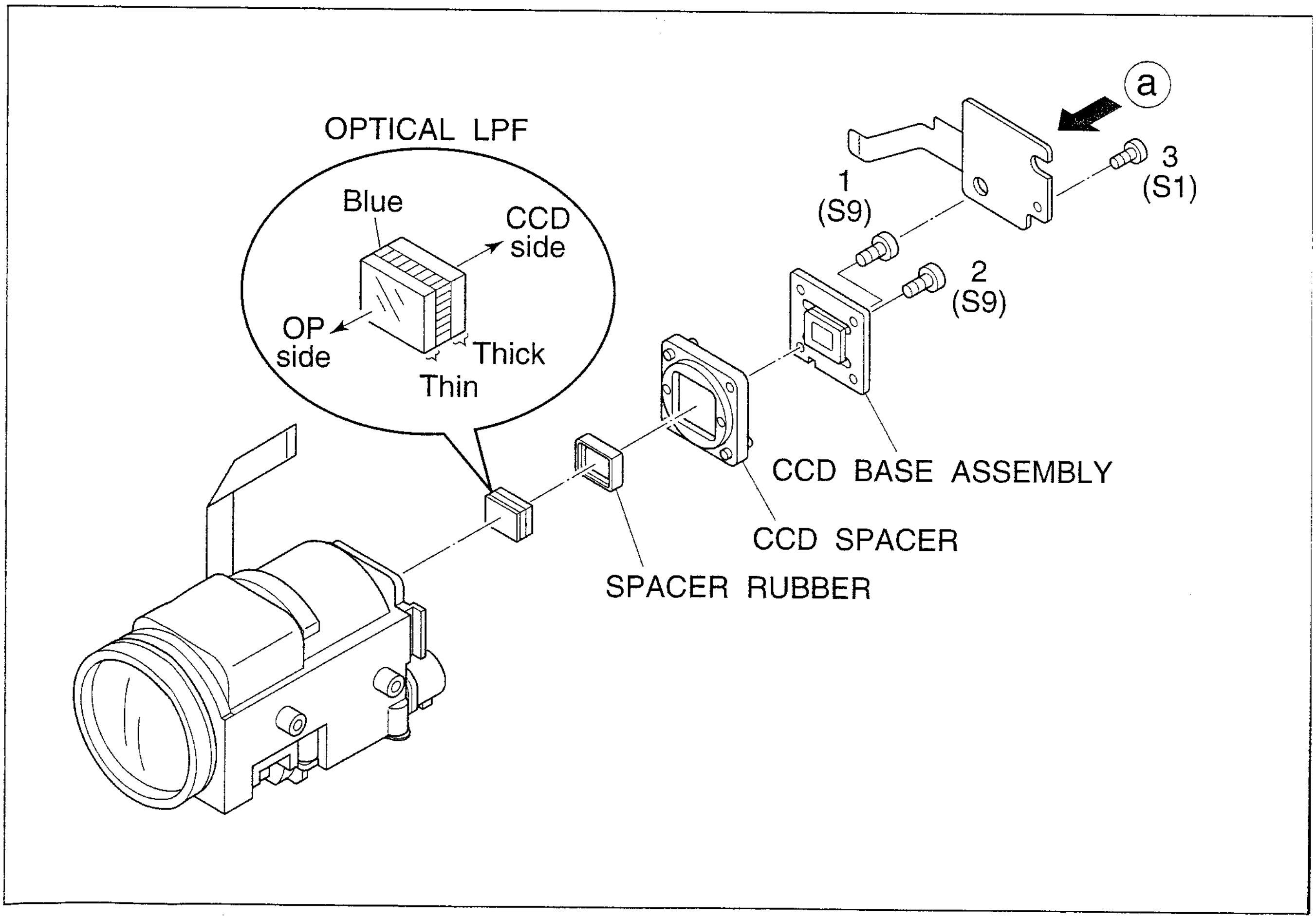


Fig. 1-5-1

1.6 HOW TO TAKE OUT TAPE MANUALLY

In the case the loaded cassette tape cannot be ejected because of electrical failure, manually take it out of the mechanism according to the following procedure, however keep it in mind that it is a temporary measure to the end. From viewpoints of workability and reliability, it is therefore recommended to remove exterior parts so that the tape can easily be taken out of the mechanism.

1) Disconnect the power source (battery, DC cord, etc.) from the set.
2) Remove the exterior parts starting from the CASSETTE COVER assembly to the OPE (DECK) UNIT referring to "1.3 DISASSEMBLING/REASSEMBLING CABINET COMPONENTS" (pages 1-4 and 1-5).
3) Remove the parts starting from the ZOOM UNIT assembly to the FRAME FRONT assembly referring to "1.4 DISASSEMBLING/REASSEMBLING CAMERA AND DECK COMPONENTS" (Page 1-7 and 1-8).
4) Supply 3 V DC to the electrode of the motor until the slide deck assembly projects towards the front side (when both the pole bases enter the unloading status inside the tape). At that time, pay heed to the tape and pole bases not to damage the tape and not to get them soiled with grease, etc., because the tape is not wound up and still remains in the mechanism. If the unloading status continues after both the pole bases return to the inside of the tape, the mechanism is finally shifted to the eject position and the cassette housing assembly is lifted up. If the mechanism enters this status, it may cause damage to the tape because the tape that has been pulled out is caught in the tape lids. To avoid such the problem, hold the front tape lid open with an adhesive tape or the like to prevent it from closing even when the cassette housing is lifted up. (Refer to Fig. 1-6-1.)
5) Turn the center gear assembly with a sharp-pointed tool (such as the chip IC replacing jig, etc.) in the direction of the arrow to wind up the tape. At that time, pay heed to the point of the tool not to scratch other things with it.

   If the tape cannot be wound up by turning the center gear assembly, it is thinkable that the idler arm assembly is wrong positioned and it fails in engaging with the reel disk assembly. If so, slightly shift the idler arm assembly in the loading direction for fine adjustment of the mechanism mode.
6) After confirming that the tape is completely wound up, continue the unloading operation of the mechanism until it reaches the eject position. Then, take the cassette tape out of the set.
7) After taking out the cassette tape, check to see if it is soiled with grease, etc., or not. At the same time, check the mechanism assembly, particularly the tape transport mechanism, if there is nothing soiled or damaged.

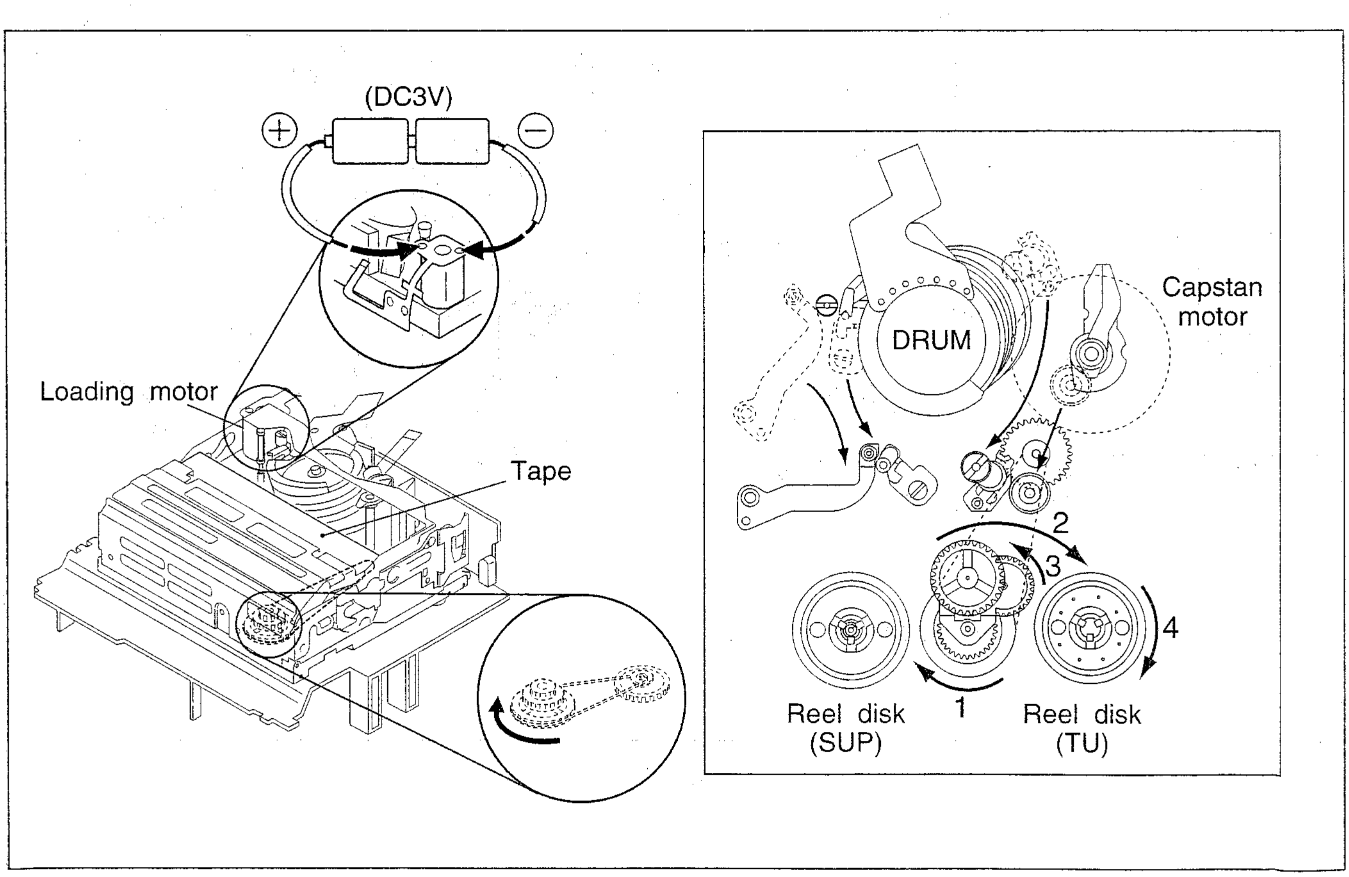


Fig. 1-6-1

1.7 EXTENSION CABLE CONNECTION

Connector	Pins	Connection			Parts Number
①	100	MAIN CN101	⟷	SECOND CN301	YTU94126A-100
②	22	MAIN CN107	⟷	OP BLOCK	YTU94074-22 YTU94077-22
③	14	MAIN CN106	⟷	CCD	YTU94074-14 YTU94077-14
④	20	MAIN CN104	⟷	E. VF	YTU94074-20 YTU94077-20
⑤	10	MAIN CN110	⟷	OPERATION (DECK) UNIT	YTU94074-10 YTU94077-10
⑥	14	MAIN CN109	⟷	ZOOM UNIT	YTU94074-14 YTU94077-14

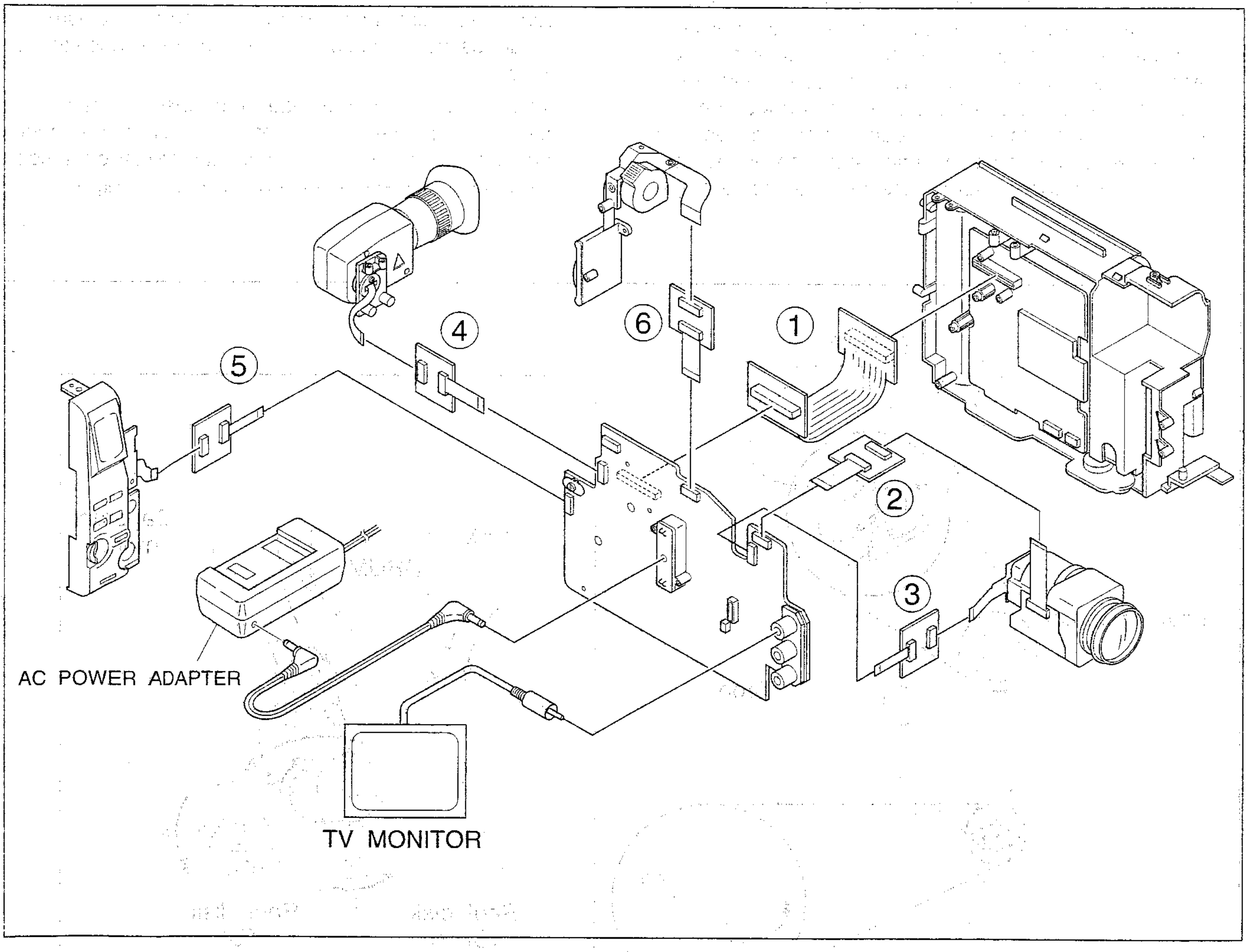


Fig. 1-7-1

Screw Management Table

<Cabinet Parts>

	①				②		③		④		⑤													⑥	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Paste Here →	*	*	*	*																					
Fig. No. →	C1				C2		C3		C4		C5													C6	

	⑦		⑧		⑨	⑩
	26	27	28	29	30	–
Paste Here →						–
Fig. No. →	C7		C8			

<Camera Section/Deck Section>

	①			②				③		④				⑤		⑥	⑦	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Paste Here →																		
Fig. No. →	D1			D2				D3		D4								

<Caution>

* ; Don't reuse the screw, because screw lock bond was applied to them.

Table 1-8-1

1.9 EMERGENCY DISPLAY

Whenever some abnormal signal is supplied to mechacon CPU, an error number (E 04, for example) displayed in the electronic view finder.

- In an emergency mode, all operations except turning on/off the POWER switch are ineffectual.

E. VF	Symptom	Mode when observed	Resulting mode
E07	Short circuit of capstan MDA	Power ON	Power OFF
E06	CAPSTAN FG input absent	EDIT	Power OFF
E04	DRUM FF input absent	DRUM rotation	Power OFF
E03	SUPPLY REEL FG input absent	REC, PLAY, SEARCH, FF	UNLOADING →Power OFF
E02	Mode control motor rotates for more than 10 sec without shift to next mode.	UNLOADING	Power OFF
E01	Mode control motor rotates for more than 10 sec without shift to next mode.	LOADING	Power OFF
E00	Overtime the programming transaction	REC, PLAY	Power OFF

1.10 DEMONSTRATION MODE

This model has the DEMONSTRATION mode.

1) How to set the DEMONSTRATION mode.

The camera can be entered into the DEMONSTRATION mode by setting on the DISPLAY screen appearing in the viewfinder.

When entering the camera into the DEMONSTRATION mode, pay heed to the following matters.

No cassette is set in the camcorder or a cassette is set in the camcorder but it is protected from recording.

1. Set the POWER switch to turn on the "PRO".
   Press the MENU BUTTOM once.
   The first page of the DISPLAY appears in the viewfinder.
2. Turn the SELECT DIAL in the direction of the arrow to set the cursor at "TO SYSTEM MENU".
   The second page of the DISPLAY appears in the viewfinder.

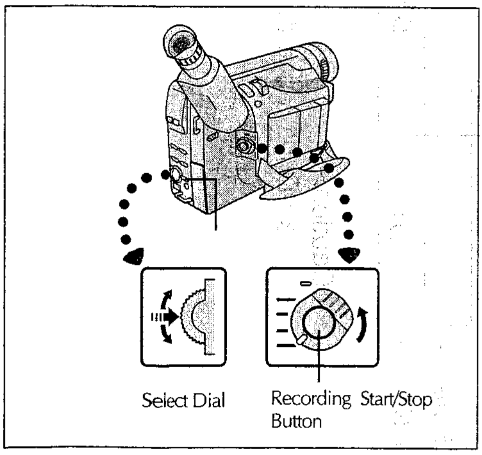
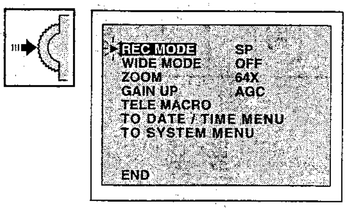
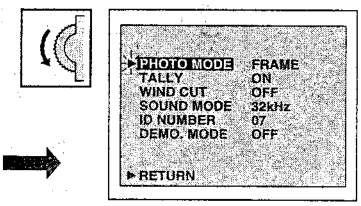


Fig. 1-10-1



```
▶REC MODE          SP
 WIDE MODE         OFF
 ZOOM              64X
 GAIN UP           AGC
 TELE MACRO
 TO DATE / TIME MENU
 TO SYSTEM MENU

 END
```

Display 1



```
▶PHOTO MODE        FRAME
 TALLY             ON
 WIND CUT          OFF
 SOUND MODE        32kHz
 ID NUMBER         07
 DEMO. MODE        OFF

▶RETURN
```

Display 2

See to next page

<Flow chart>

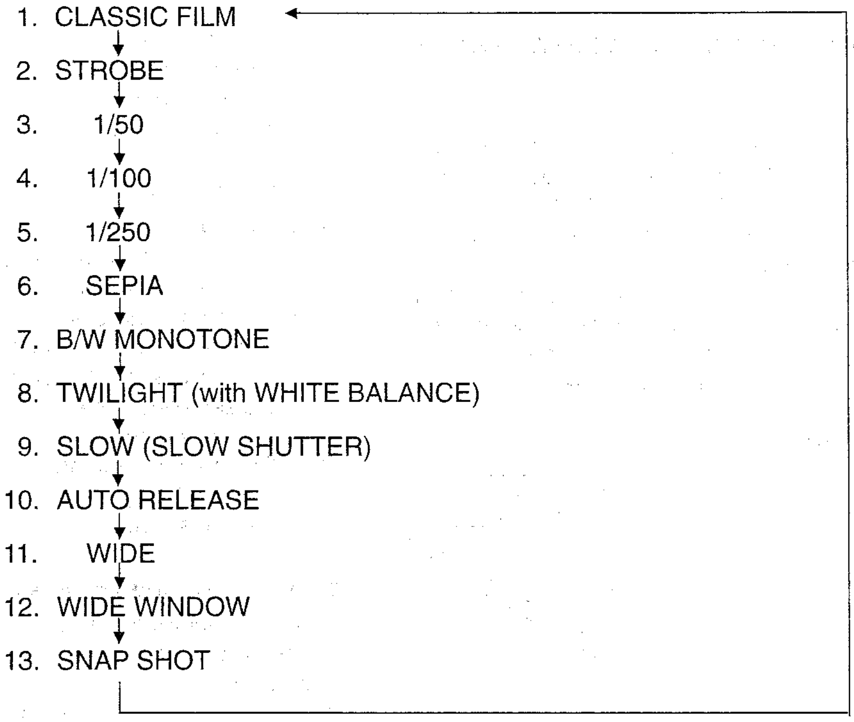

1. CLASSIC FILM
2. STROBE
3. 1/50
4. 1/100
5. 1/250
6. SEPIA
7. B/W MONOTONE
8. TWILIGHT (with WHITE BALANCE)
9. SLOW (SLOW SHUTTER)
10. AUTO RELEASE
11. WIDE
12. WIDE WINDOW
13. SNAP SHOT

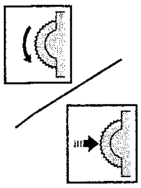
Fig. 1-10-2

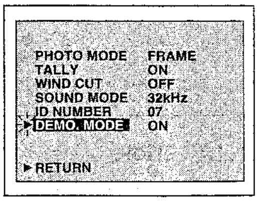
2) How to cancel the DEMONSTRATION mode.
To cancel the DEMONSTRATION mode, turn the POWER switch off ("POWER OFF").

3. Turn the SELECT DIAL in the direction of the arrow to set the cursor at "DEMO MODE". Then, press the SELECT DIAL once. The third page of the DEMO MODE appears in the viewfinder.

4. Turn the SELECT DIAL in the direction of the arrow to set the cursor at "ON". Then, press the SELECT DIAL once. The fourth page of the DISPLAY appears in the viewfinder. ("DEMO MODE" is switched "ON" from "OFF" status.)

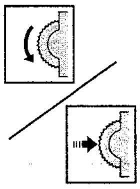
5. Press the SELECT DIAL once. The camcorder automatically enters the DEMONSTRATION mode and it repeats demonstration operation. While the camcorder is performing demonstration, all operations except turning on/off the POWER switch are ineffectual.

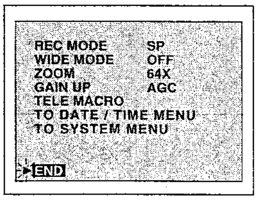




```
PHOTO MODE   FRAME
TALLY        ON
WIND CUT     OFF
SOUND MODE   32kHz
ID NUMBER    07
►DEMO. MODE  ON

►RETURN
```

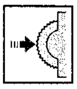
Display 3





```
REC MODE     SP
WIDE MODE    OFF
ZOOM         64X
GAIN UP      AGC
TELE MACRO
TO DATE / TIME MENU
TO SYSTEM MENU

►END
```

Display 4



Refer to Fig. 1-10-2.
While the DEMONSTRATION mode is activated, letter(s) appears one after another to spell out "DEMONSTRATION", on the viewfinder. Namely, "D", the first letter of "DEMONSTRATION", appears first, "DE" appears next, "DEM" third, "DEMO" fourth, ... and "DEMONSTRATION" last. Following "DEMONSTRATION", "D" appears again to repeat the series of this spellingout as far as the camcorder remains in the DEMONSTRATION mode.

SECTION 2
MECHANISM ADJUSTMENT

2.1 PRELIMINARY REMARKS ON ADJUSTMENT AND REPAIR

2.1.1 Precautions

1. When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.04 N.m (0.4 kgf.cm).
2. Be sure to disconnect the set from the power supply before fastening and soldering parts.
3. When disconnecting/connecting wires, be careful not to get them and their connectors damaged. (Refer to the Section 1.)
4. When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

2.1.2 Necessary jigs

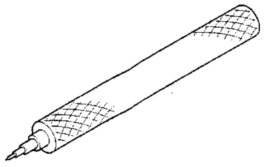
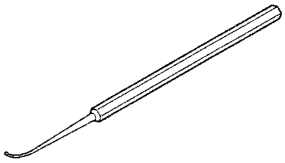
1 SLIT WASHER FITTING JIG YTU94121A	2 Chip IC replacement jig PTS40844-2
	

Fig. 2-1-1

2.1.3 Notes on disassembling/reassembling procedure

The disassembling procedure table (Table 2-2-2 on page 2-5, a part of the table is shown below for reference) shows the procedure to disassemble/reassemble mechanism parts. Carefully read the following explanation before starting actual disassembling/reassembling work. The item numbers (circled numbers) in the following explanation correspond to those appearing under respective columns of the table.

① : Circled numbers appearing in this column indicate the order to remove parts. When reassembling, follow these numbers in the reverse order. Circled numbers in this column correspond to those appearing in drawings of this section.

② : This column shows part names corresponding to circled numbers in the left column.

③ : The symbol (T or B) appearing in this column shows the side which the objective part is mounted on.
T = the upper side, B = the lower side

④ : Symbols appearing in this column indicate drawing numbers.

⑤ : This column indicates parts and points such as screws, washers, springs, and others to be removed/fitted for disassembling/reassembling the mechanism. Besides such the parts, this column occasionally indicates working points.
P = Spring
W = Washer
S = Screw
* = Lock (L), soldering (SD), shield, connector (CN), etc.

Example
- Remove (W1) = Washer W1.
- * Remove the solder at (SD1) = Point SD1.
- * Disconnect Ⓐ = Connector Ⓐ.

⑥ : Numbers in this column represent the numbers of notes in the text. For example, "1" means "Note 1".
(For parts that need phase adjustment after reassembling, refer to "2.2.7 Check and adjustment of mechanism phase".)

⑦ : This column indicates required after-disassembling/-reassembling work such as phase adjustment or mechanism adjustment.

2.1.4 Screws and washers used in mechanism

Table 2-1-1 shows screws and washers used in the mechanism by the part numbers with their respective symbols, shapes and colors.
When disassembling/reassembling the mechanism, be careful not to make any mistake in removing/refitting screws and washers.

Note: *Screws that are asterisked (marked with *) in the shape column are fixed with screw lock agent. If such the screw is once removed, never use it again.*

Symbol	Shape	Parts No.
(S1)		YQ43893-4
(S2)		YQ43893
(S3)		YQ43893-2
(S4)	*	LY30018-008A
(S5)		QYSLSP2030D

Symbol	Shape	Parts No.
W1		YQ44246
W2		YQ44246-2

Table 2-1-1

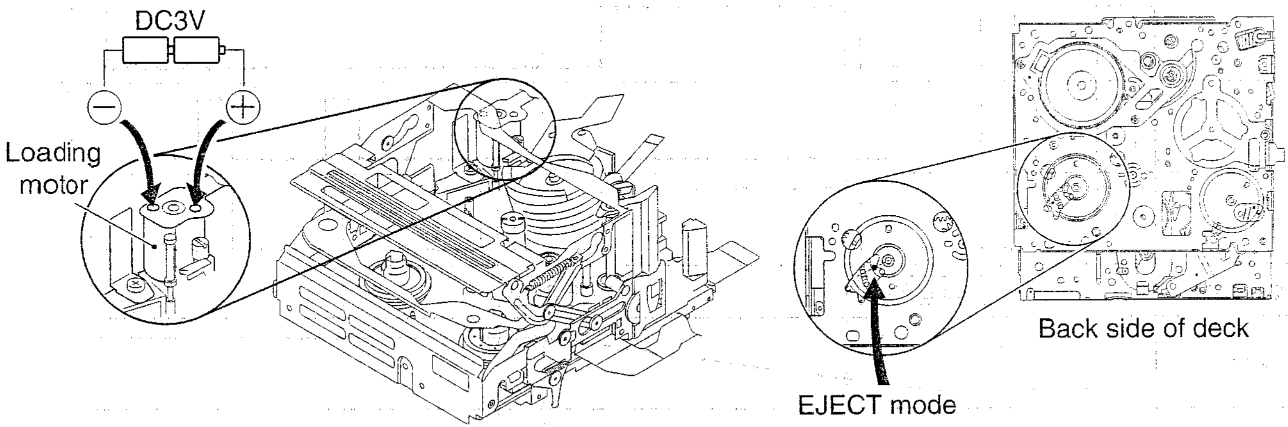
Step	Part Name		Fig.	Point	Note	Remarks
Ⓐ Cassette housing assembly		T	M1	3(S1),(L1)-(L4)	1,28,29,30	Adjustment
①	Reel disk (SUP) assembly	T	M2	(W1)	2,3	
②	Reel disk (TU) assembly	T	M2	(W1)	2,3	
↑ ①	↑ ②	↑ ③	↑ ④	↑ ⑤	↑ ⑥	↑ ⑦

2.2 DISASSEMBLING/REASSEMBLING MECHANISM ASSEMBLY

2.2.1 General statement

The mechanism should generally be disassembled/reassembled in the EJECT mode (ASSEMBLY mode). (Refer to Fig. 2-2-1.)

However, when the mechanism is removed from the main body, it is set in the STOP mode. Therefore, it is required to shift the mechanism mode from the STOP mode to the EJECT mode after the mechanism is removed from the main body. In such the case, supply 3 V DC to the electrode on the top of the loading motor to enter the mechanism mode into the EJECT mode.


<Mechanism assembly/Cassette housing assembly>

<Back side of the mechanism assembly>

Fig. 2-2-1

2.2.2 Explanation of mechanism mode

The mechanism mode of this model is classified into six modes as shown in Table 2-2-1. Each mechanism mode can be distinguished from others by the relative position of "●" mark on the sub cam gear to the inner or outer protrusion on the main deck.
Refer to Fig. 2-2-2 to 2-2-7 below.
The EJECT mode, C IN mode and SHORT FF mode should be recognized by the relative position of the "●" mark to the inner protrusion, while the STOP mode, REV mode and PLAY mode should be recognized by that to the outer protrusion.

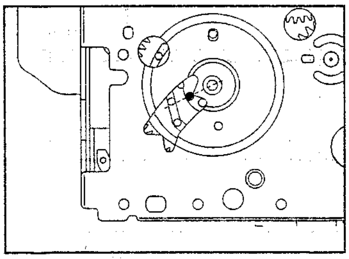

<EJECT mode>

Fig. 2-2-2

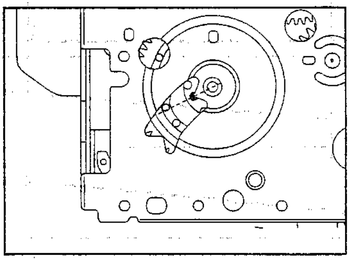

<C IN mode>

Fig. 2-2-3

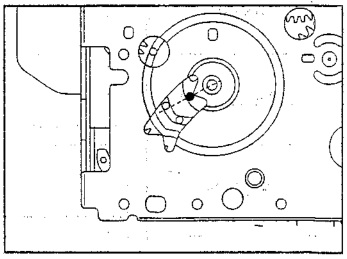

<SHORT FF mode>

Fig. 2-2-4

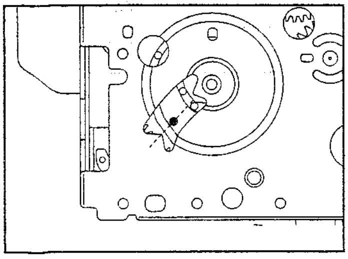

<STOP mode>

Fig. 2-2-5

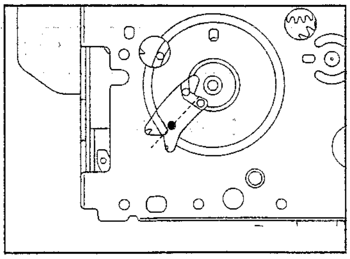

<REV mode>

Fig. 2-2-6

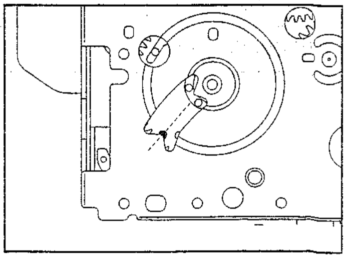

<PLAY mode>

Fig. 2-2-7

2.2.3 Mechanism timing chart

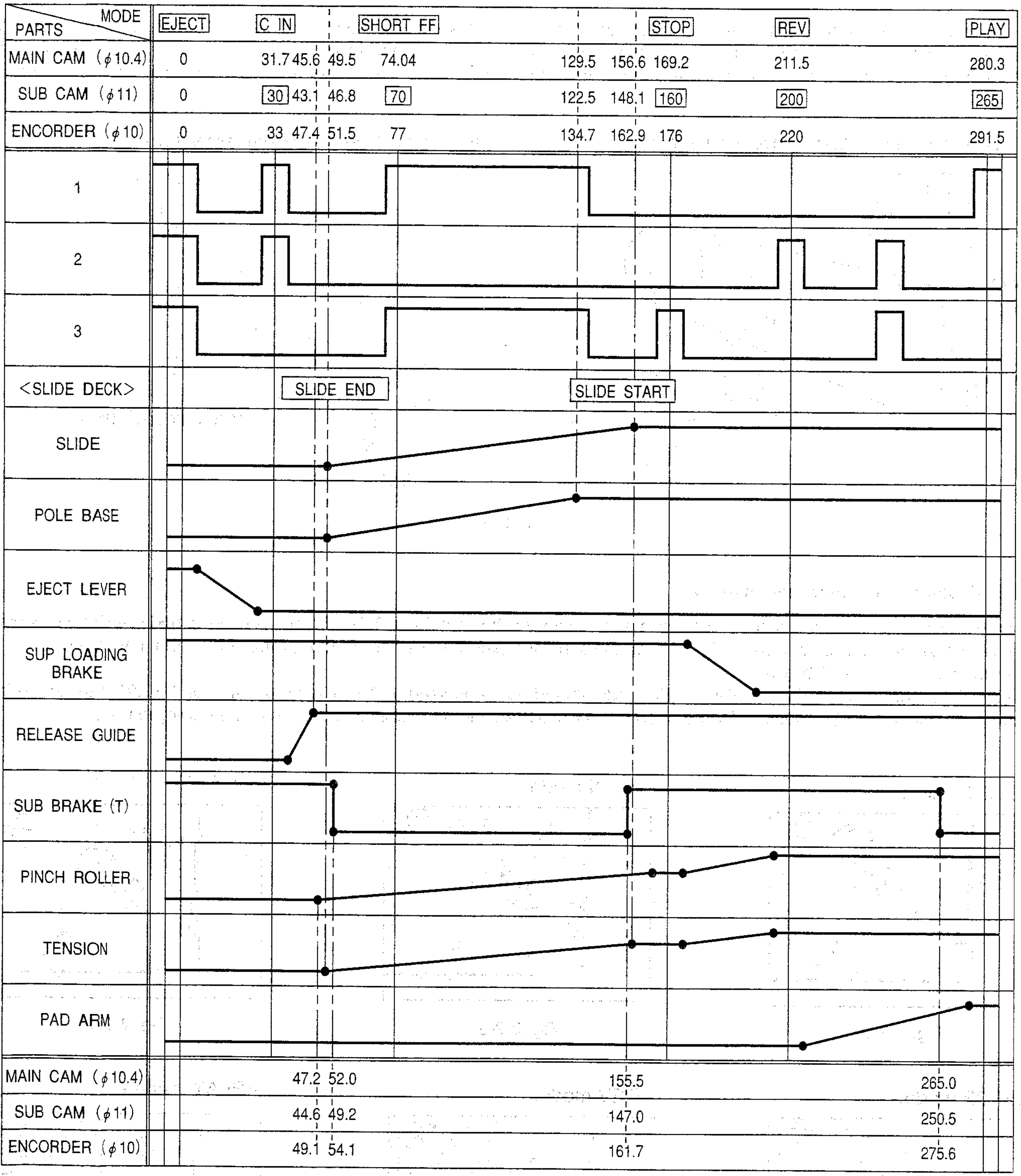

MODE
PARTS
EJECT
C IN
SHORT FF
STOP
REV
PLAY
MAIN CAM (φ10.4)
0
31.7
45.6
49.5
74.04
129.5
156.6
169.2
211.5
280.3
SUB CAM (φ11)
0
30
43.1
46.8
70
122.5
148.1
160
200
265
ENCORDER (φ10)
0
33
47.4
51.5
77
134.7
162.9
176
220
291.5
1
2
3
<SLIDE DECK>
SLIDE END
SLIDE START
SLIDE
POLE BASE
EJECT LEVER
SUP LOADING BRAKE
RELEASE GUIDE
SUB BRAKE (T)
PINCH ROLLER
TENSION
PAD ARM
MAIN CAM (φ10.4)
47.2
52.0
155.5
265.0
SUB CAM (φ11)
44.6
49.2
147.0
250.5
ENCORDER (φ10)
49.1
54.1
161.7
275.6

Table 2-2-1

2.2.4 Disassembling/reassembling mechanism assembly

1. Configuration

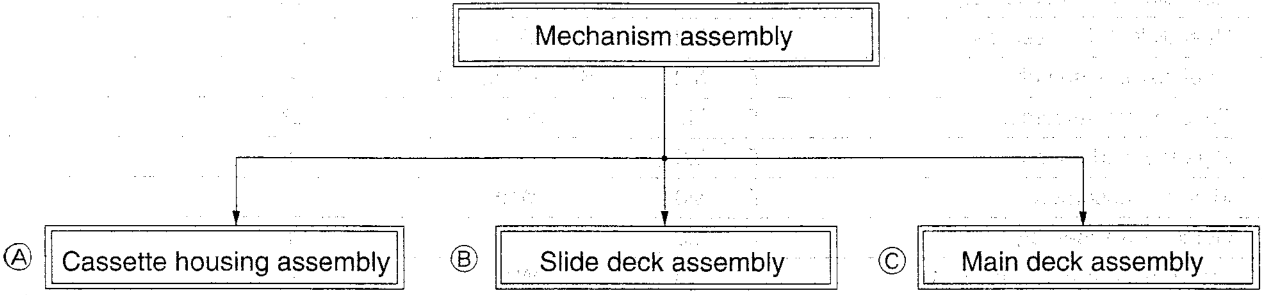

Mechanism assembly
Ⓐ Cassette housing assembly
Ⓑ Slide deck assembly
Ⓒ Main deck assembly

Fig.2-2-8

2. Procedures for disassembly

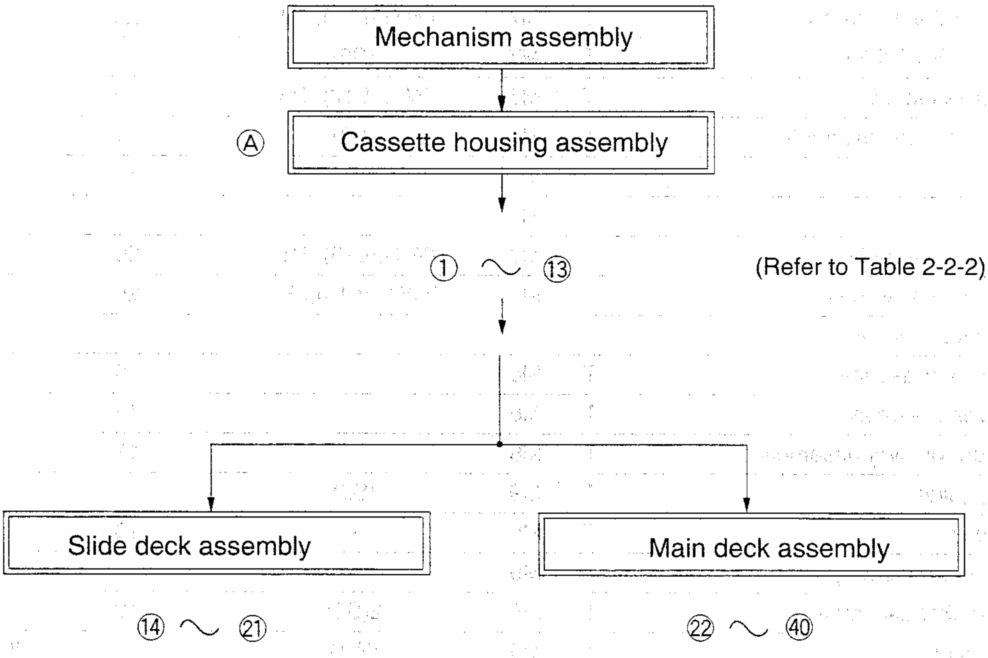

Mechanism assembly
Ⓐ Cassette housing assembly
① ~ ⑬
(Refer to Table 2-2-2)
Slide deck assembly
Main deck assembly
⑭ ~ ㉑
㉒ ~ ㊵

Fig. 2-2-9

3. Disassembling procedure table

Step	Part Name		Fig.	Point	Note	Remarks
Ⓐ	Cassette housing assembly	T	M1	3(S1),(L1)-(L4)	1,28,29,30	Adjustment
①	Reel disk (SUP) assembly	T	M2	(W1)	2,3	
②	Reel disk (TU) assembly	T	M2	(W1)	2,3	
③	Reel cover assembly	T	M2	(S2),2(S1),(W1)	-	
④	Tension arm assembly	T	M3	(W1)	27	
⑤	Release guide assembly	T	M3	-	4	
⑥	Idler arm assembly	T	M3	(W2)	-	
⑦	Guide arm assembly	T	M3	-	4	
⑧	Pinch roller arm assembly	T	M3	(W1)	-	
⑨	Cleaner arm assembly	T	M4	(L5)	5	
⑩	Slant pole arm assembly	T	M4	(W1),(L6),(P1),(P2)	26	
⑪	Drum assembly	T	M4	3(S2)	6	
⑫	Guide roller (S) assembly	T	M5	(P3)	7,8	
⑬	Rail assembly	T	M5	3(W1)	9,25	
Ⓑ	Slide deck assembly/Ⓒ Main deck assembly	T	M6	(W1),(L7)-(L10)	10,24	(Adjustment)
Ⓑ	Slide deck assembly					
⑭	Loading brake assembly	T	M7	(W1),(L11),(P4)	23	Adjustment
⑮	Guide pin (SUPPLY)	T	M7	(S2)	-	
⑯	Pad arm assembly	T	M7	(W1),(L12),(P5)	22	
⑰	Slide guide plate assembly	T	M7	(S3)	21	Adjustment
⑱	Collar	T	M7	-	11	
⑲	Collar	T	M7	-	11	
⑳	Sub brake assembly	T	M7	(W1),(L13),(P6)	20	
㉑	Control plate assembly	T	M7	2(W1),(L14),(P7)	20	
Ⓒ	Main deck assembly					
㉒	Tension lever assembly	T	M8	-	19	
㉓	Slide lever assembly	T	M8	-	18	
㉔	Brake control lever assembly	T	M8	-	17	
㉕	Loading guide	T	M9	(S2)	-	
㉖	Timing belt	T	M9	-	16	
㉗	Center gear assembly	T	M9	-	-	
㉘	Motor bracket assembly	T	M9	2(S2)	12	
㉙	Worm wheel	T	M9	(W1)	-	(Phase adjustment)
㉚	Gear holder	T	M9	(S2)	-	
㉛	Main cam gear	T	M10	(S2)	15	Phase adjustment
㉜	Brake control plate	T	M10	(L15)	15	Phase adjustment
㉝	Rotary encoder	T	M10	(S2),(W1)	13	Phase adjustment
㉞	Connect gear	T	M10	(W1)	-	(Phase adjustment)
㉟	Reel drive pulley assembly	T	M10	(W2)	-	
㊱	Catcher (T) assembly	T	M11	2(S2)	-	
㊲	Capstan motor	T	M11	2(S2)	-	
㊳	Charge arm assembly	T	M11	(W1)	14	
㊴	Sub cam gear	T	M11	(S2)	-	Phase adjustment
㊵	PWB holder	B	M11	2(S2)	-	

Table 2-2-2

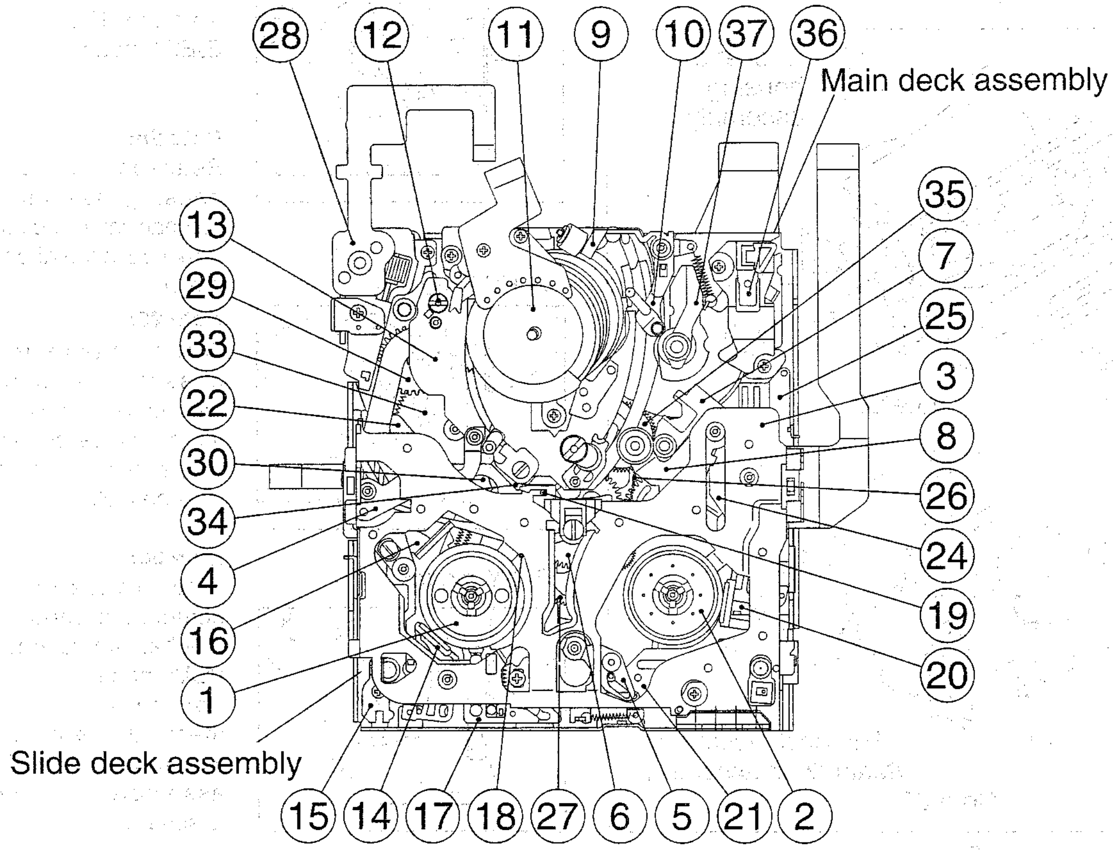

28
12
11
9
10
37
36
Main deck assembly
35
7
25
3
8
26
24
19
20
13
29
33
22
30
34
4
16
1
Slide deck assembly
15
14
17
18
27
6
5
21
2

Fig. 2-2-10 Top view

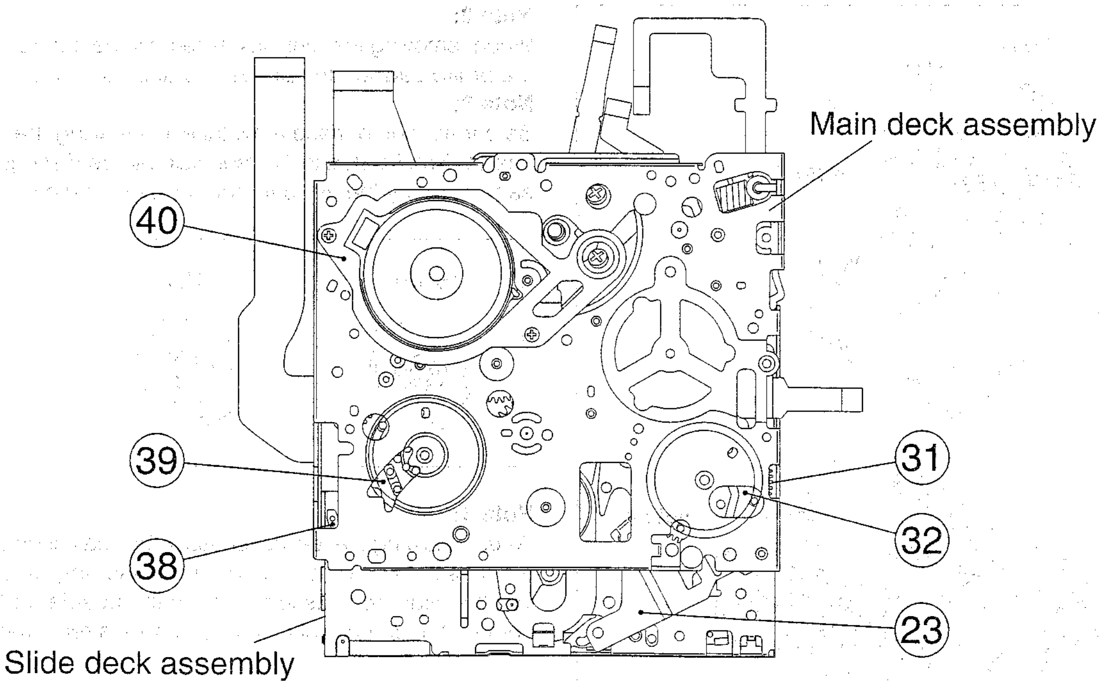

Main deck assembly
40
39
38
31
32
23
Slide deck assembly

Fig. 2-2-11 Bottom view

2.2.5 Disassembling/reassembling

1. Ⓐ Cassette housing assembly

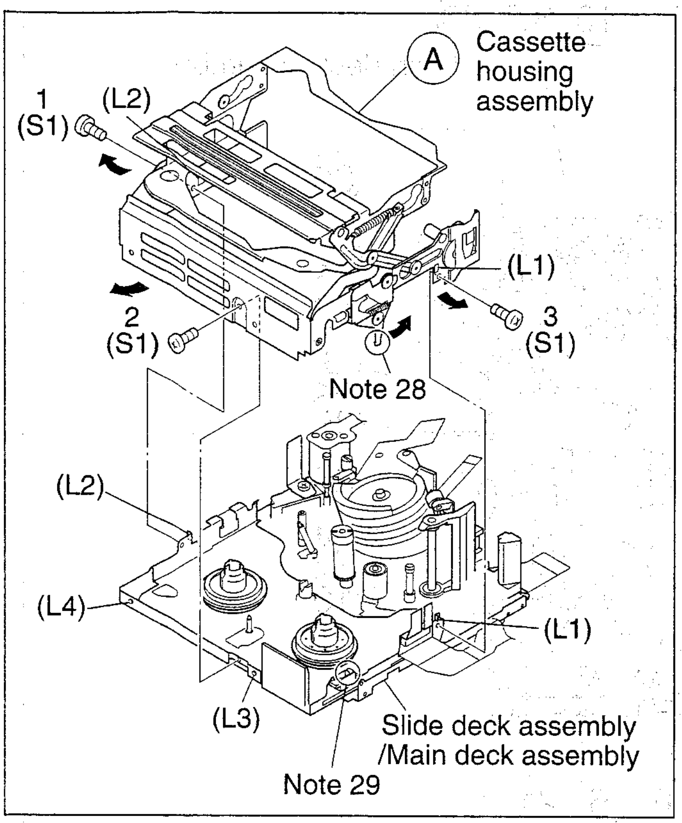
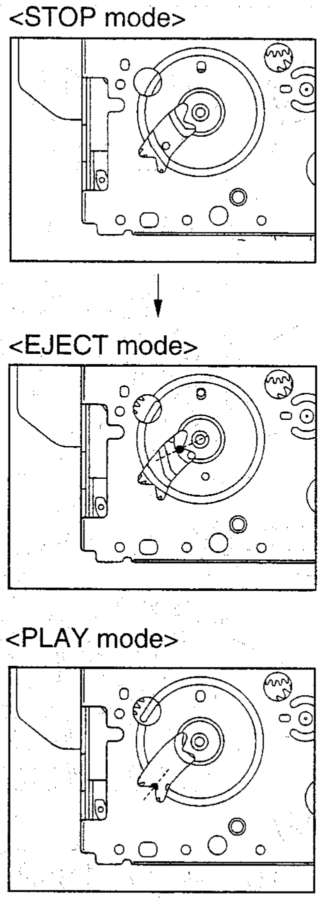

A
Cassette housing assembly
1
(S1)
(L2)
2
(S1)
3
(S1)
(L1)
Note 28
(L2)
(L4)
(L1)
(L3)
Slide deck assembly /Main deck assembly
Note 29

Fig. M1



Note 1:
Shift the mechanism mode from the STOP mode to the EJECT mode.

Note 28:
Reassemble the cassette housing assembly to the mechanism as the cancel lever is moved in the direction of the arrow.

Note 29:
When reassembling the cassette housing to the mechanism, make sure that there is no deformation in the frame or no damage to the switches, etc.

Note 30:
After reassembling the component parts, check the mechanism operation in the PLAY mode.
For details of checking method, refer to "2.2.8 Reassembling slide deck assembly and main deck assembly".

2. ① Reel disk (SUP) assembly
② Reel disk (TU) assembly
③ Reel cover assembly

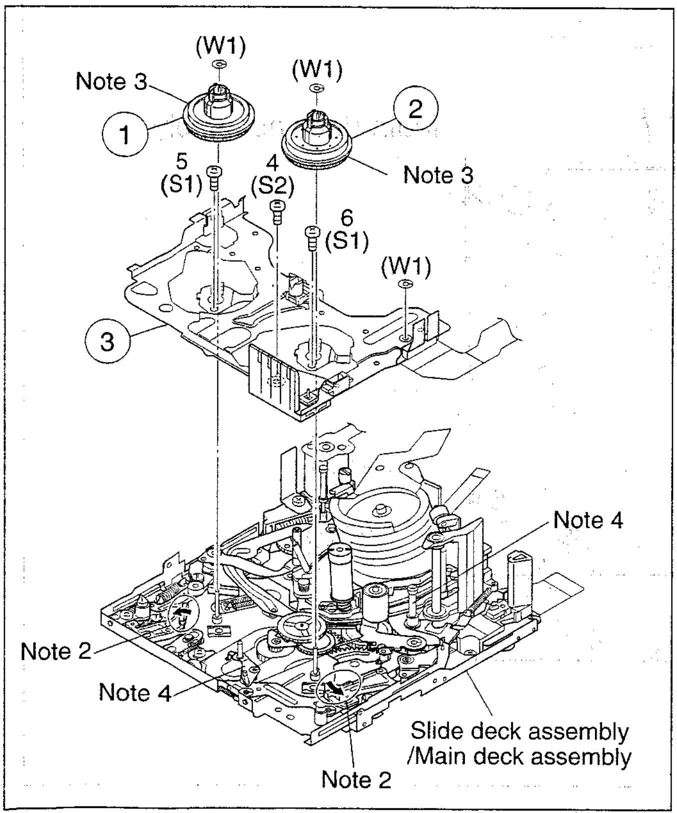
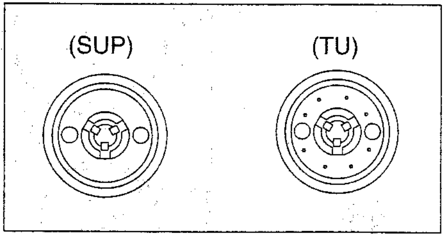

(W1)
Note 3
1
(W1)
2
5
(S1)
4
(S2)
Note 3
6
(S1)
(W1)
3
Note 4
Note 2
Note 4
Slide deck assembly /Main deck assembly
Note 2

Fig. M2

Note 2:
When removing the reel disk assembly, be careful not to break the brake pad which applies lateral pressure to the reel disk.

Note 3:
Be careful not to make a mistake in installing the reel disk. The SUP reel disk and TU reel disk can be distinguished from each other by the appearance as shown below.



Note 4:
When removing the reel cover assembly, pay heed to the guide arm assembly. For, the guide arm assembly is just inserted into the slide deck assembly from the upside and it is apt to come off after the reel cover assembly is removed.

3. ④ Tension arm assembly/ ⑤ Release guide assembly ⑥ Idler arm assembly/ ⑦ Guide arm assembly ⑧ Pinch roller arm assembly

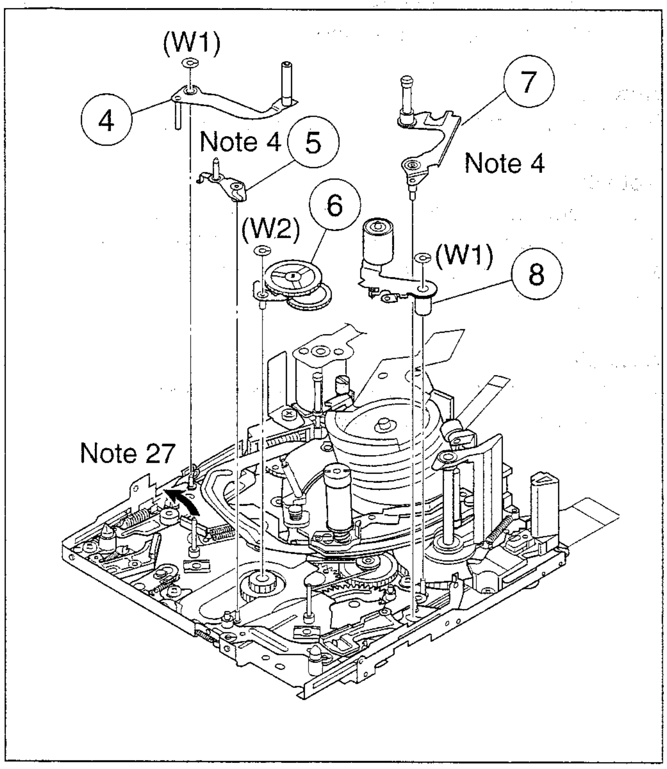
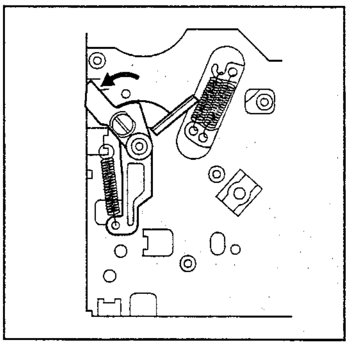


Fig. M3

Note 4:
When removing the reel cover assembly, pay heed to release guide assembly and guide arm assembly. For, the guide arm assembly is just inserted into the slide deck assembly from the upside and it is apt to come off after the reel cover assembly is removed.

Note 27:
Reassemble the tension arm assembly to the mechanism as the pad arm assembly is moved to the extent in the direction of the arrow.



4. ⑨ Cleaner arm assembly/⑩Slant pole arm assembly ⑪ Drum assembly

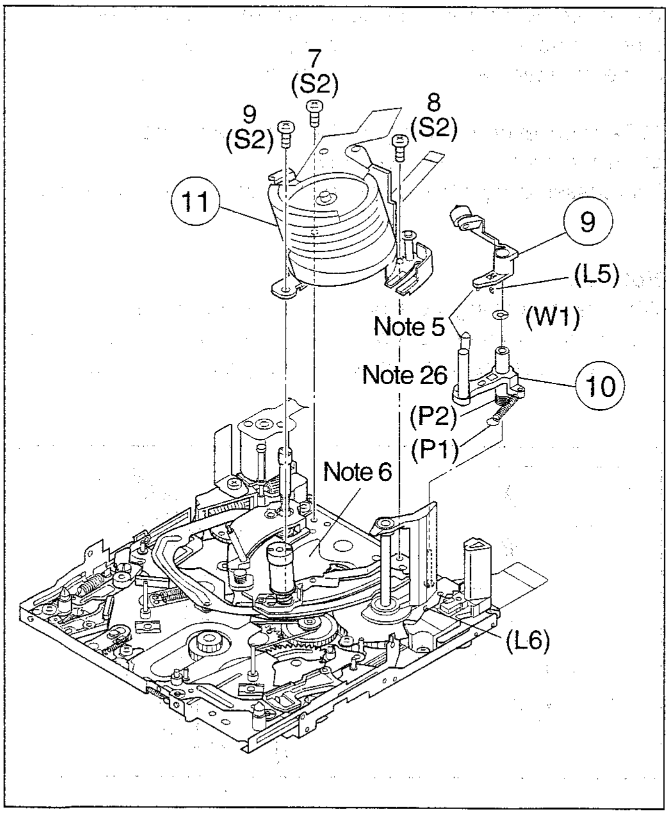
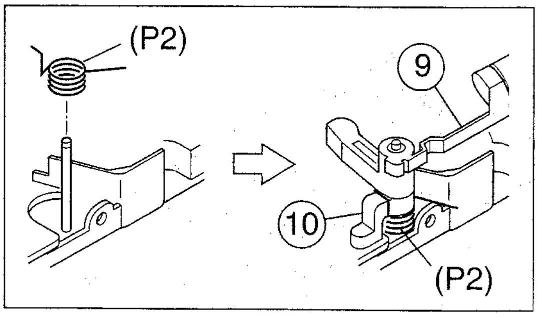


Fig. M4

Note 5:
When removing the cleaner arm assembly, it is recommended to remove the slant pole arm assembly together with it except the case of a single unit replacement, because the hook (L5) is hard to disengage.

Note 6:
When the shield is applied, carefully remove to the drum final assembly because the drum is stuck to the shield.

Note 26:
How to set the coil spring (P2).



5. ⑫ Guide roller (SUPPLY) assembly/ ⑬ Rail assembly

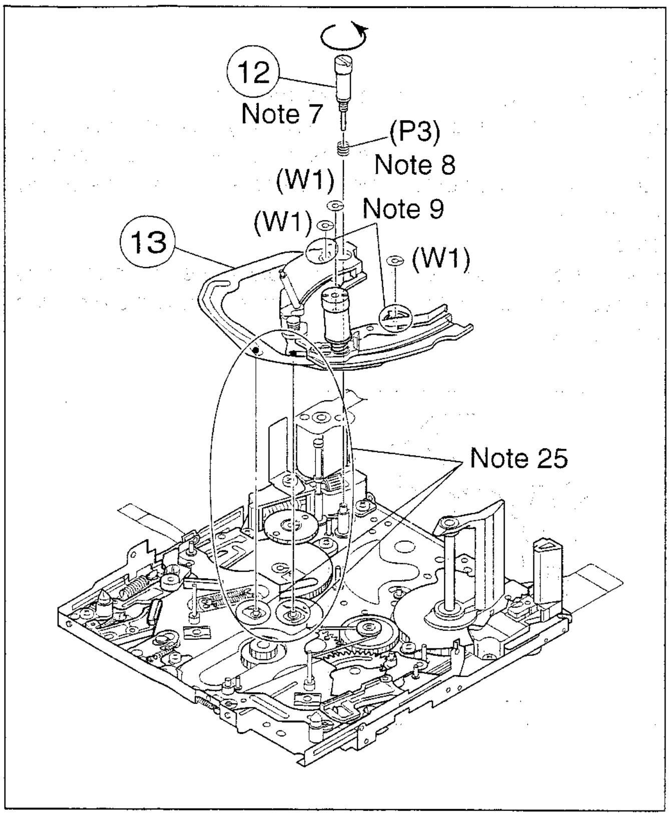


Fig. M5

Note 7:
When removing the rail assembly, remove the guide roller (SUPPLY) assembly beforehand.

Note 8:
Pay careful attention to the spring not to lose it.

Note 9:
Pay careful attention to the engagement of the rail assembly's arm ends because they easily come off the engagement. Moreover, make sure that there is neither deformation nor damage observed in them.

Note 25:
When removing the rail assembly, check to see if the collar is securely set in the arm groove.

6. Ⓑ Slide deck assembly/ Ⓒ Main deck assembly

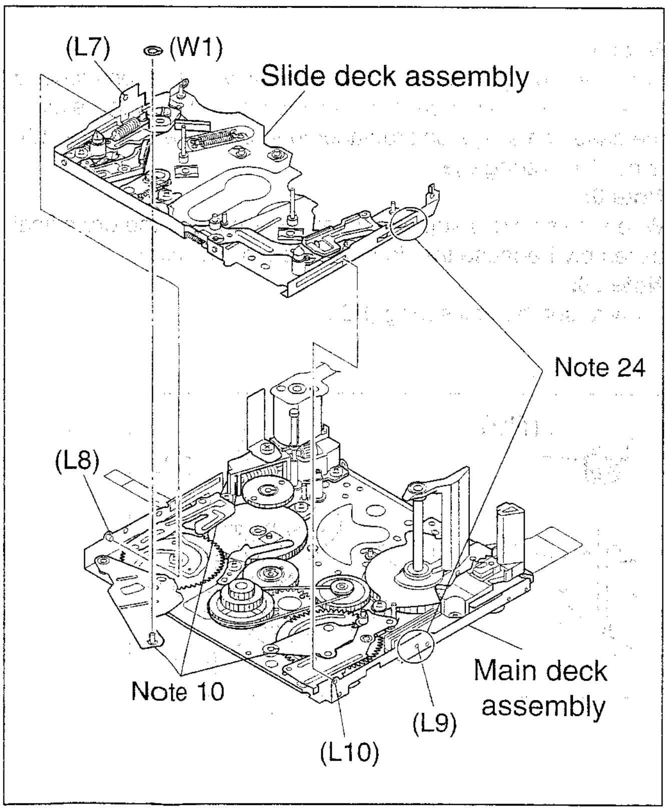
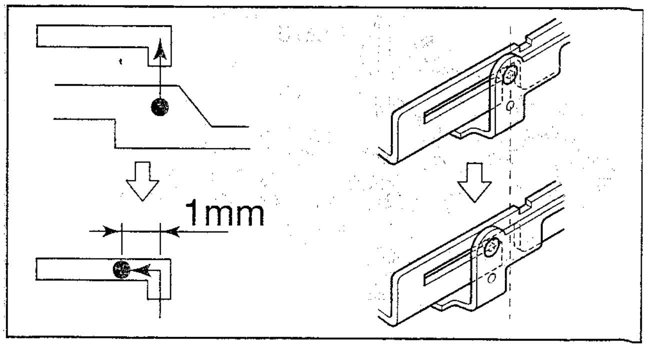


Fig. M6

Note 10:
When removing the slide deck assembly, pay heed to the three components of the following because they are apt to come off after the slide deck assembly is removed.

㉒ Tension lever assembly/㉓ Slide lever assembly
㉔ Brake control lever assembly
For reassembling those components, refer to Fig. M8 on page 2-10.

Note 24:
When reassembling the slide deck assembly to the main deck assembly, combine them with each other by the side grooves and then slide the slide deck assembly by 1 mm or so.



7. ⑭ Loading brake assembly/ ⑮ Guide pin (S)
⑯ Pad arm assembly/ ⑰ Slide guide plate assembly
⑱ Collar/ ⑲ Collar/ ⑳ Sub brake assembly
㉑ Control plate assembly

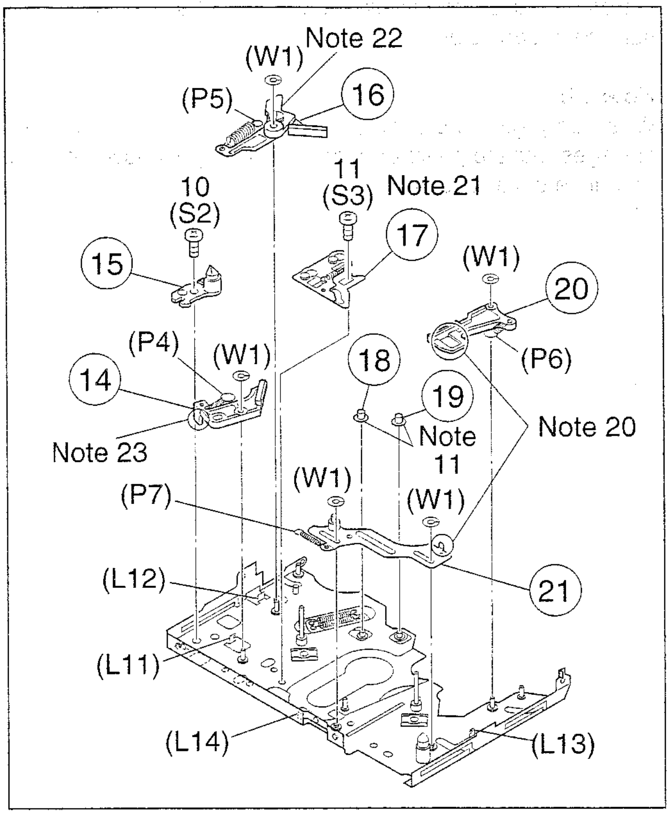


Fig. M7

8. ㉒ Tension lever assembly/ ㉓ Slide lever assembly
㉔ Brake control lever assembly

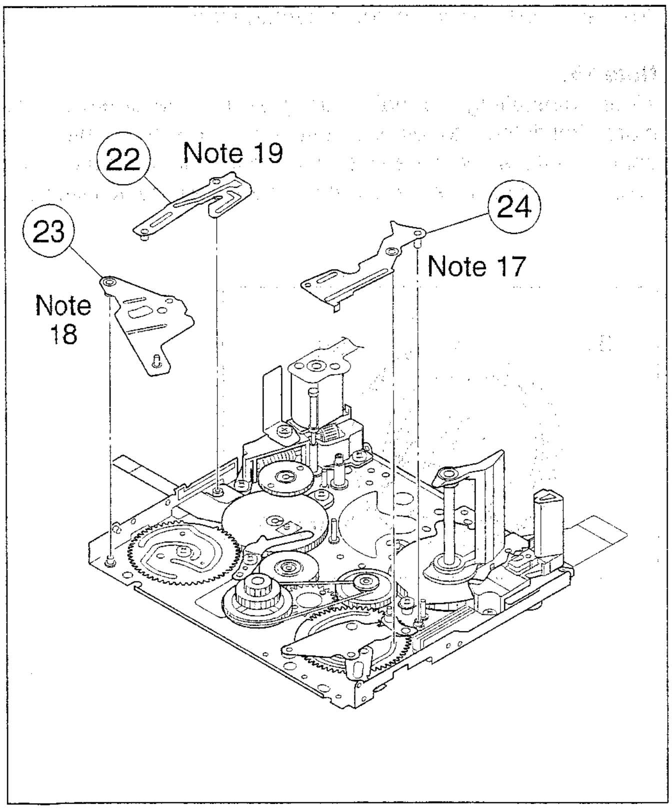
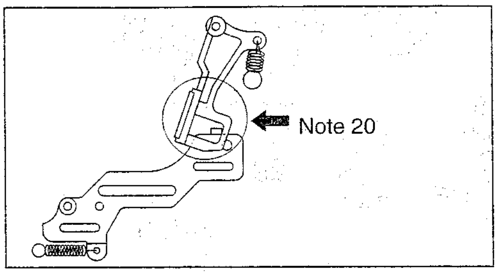


Fig. M8

Note 11:
Don't remove these parts unreasonably. If they are removed for some reason, be very careful not to lose them.

Note 20:
When reinstalling the sub brake assembly, set the control plate assembly so that its hook is set in the # part of the sub brake assembly.



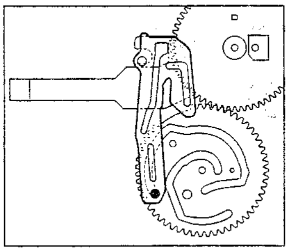
Note 21:
Since the slide guide plate assembly controls the slide deck assembly so that it exactly slides the main deck assembly, it must exactly be assembled in the PLAY mode. Therefore, temporarily fix the slide guide plate assembly in this stage. For details of reassembling procedure, refer to "2.2.8 Reassembling slide deck assembly and main deck assembly" on page 2-15.

Note 22:
The pad arm assembly controls the tension level of the tension arm assembly. For adjustment of the tension arm assembly, refer to page 2-8.

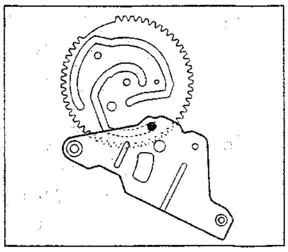
Note 23:
When reinstalling the load brake assembly, slightly lift the slide deck assembly upwards because the lower part of the load brake assembly sticks out of the slide deck assembly.

Note 17, 18, 19:
For refitting the respective parts, refer to the following figures.

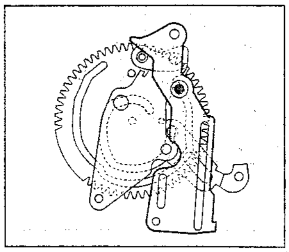
㉒ Tension lever assembly



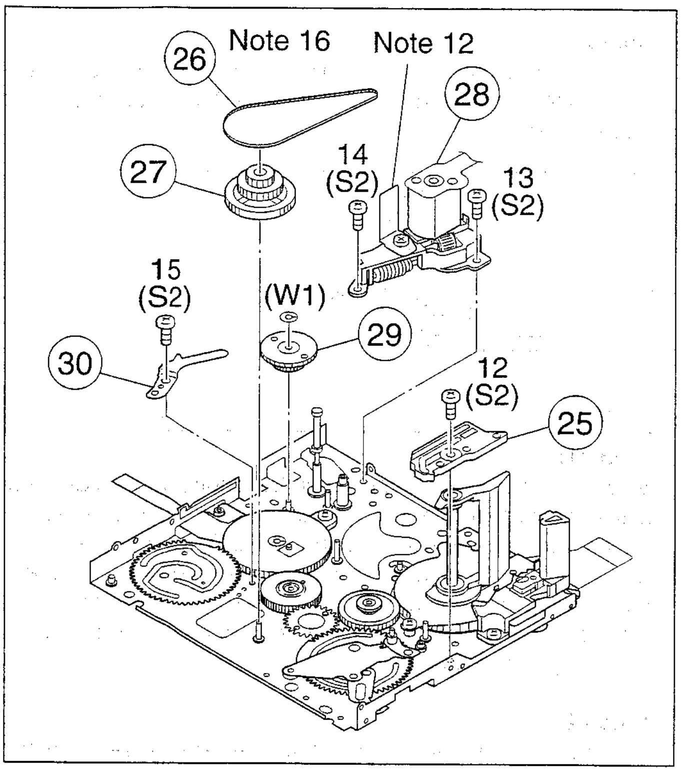
㉓ Slide lever assembly



㉔ Brake control lever assembly



9. ㉕ Loading guide/ ㉖ Timing belt ㉗ Center gear assembly/ ㉘ Motor bracket assembly ㉙ Worm wheel/ ㉚ Gear holder



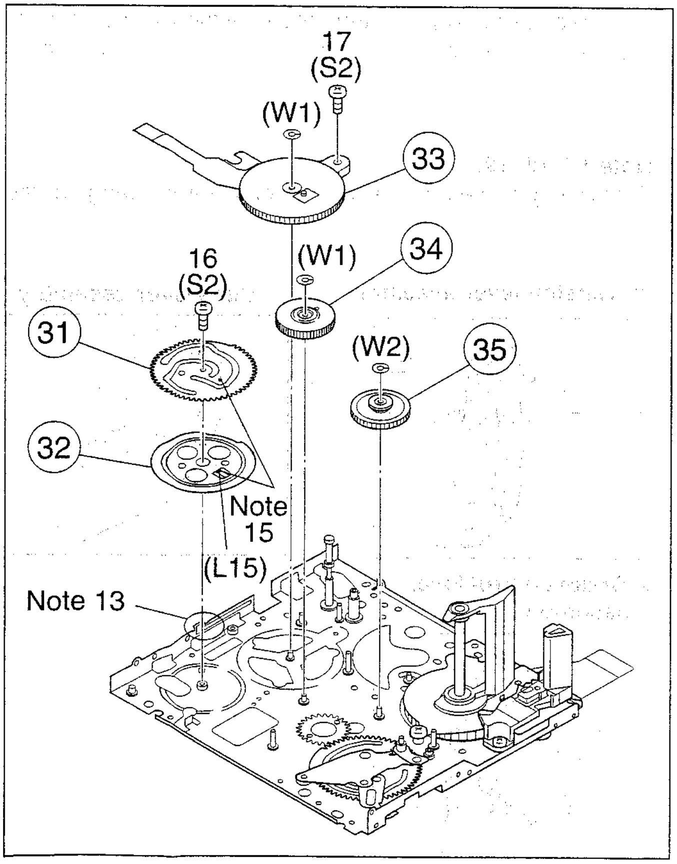
(26)
Note 16
Note 12
(28)
(27)
14
(S2)
13
(S2)
15
(S2)
(W1)
(29)
(30)
12
(S2)
(25)

Fig. M9

Note 12:
Carefully handle the DEW sensor. (Don't touch the sensor surface in particular.)

Note 16:
When engaging the timing belt, make sure that it securely engages with the gears of both the center gear assembly and reel drive pulley assembly.

10. ㉛ Main cam gear/ ㉜ Brake control plate ㉝ Rotary encoder/ ㉞ Connect gear ㉟ Reel drive pulley assembly

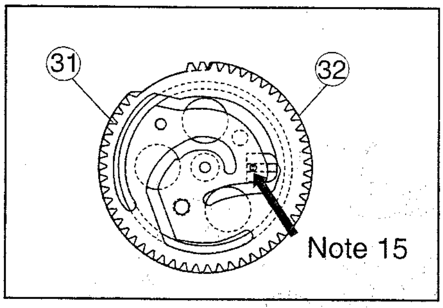


17
(S2)
(W1)
(33)
16
(S2)
(W1)
(34)
(31)
(W2)
(35)
(32)
Note
15
(L15)
Note 13

Fig. M10

Note 13:
When removing/refitting parts, pay careful attention to the flexible board and so on not to damage them.

Note 15:
When reinstalling the main cam gear and the brake control plate, first fit them together so that the protrusion on the brake control plate is set in the slot on the main cam gear as shown below, next install the two together to the main deck assembly.



(31)
(32)
Note 15

11. ㊱ Catcher (T) assembly/ ㊲ Capstan motor ㊳ Charge arm assembly/㊴ Sub cam gear ㊵ PWB holder

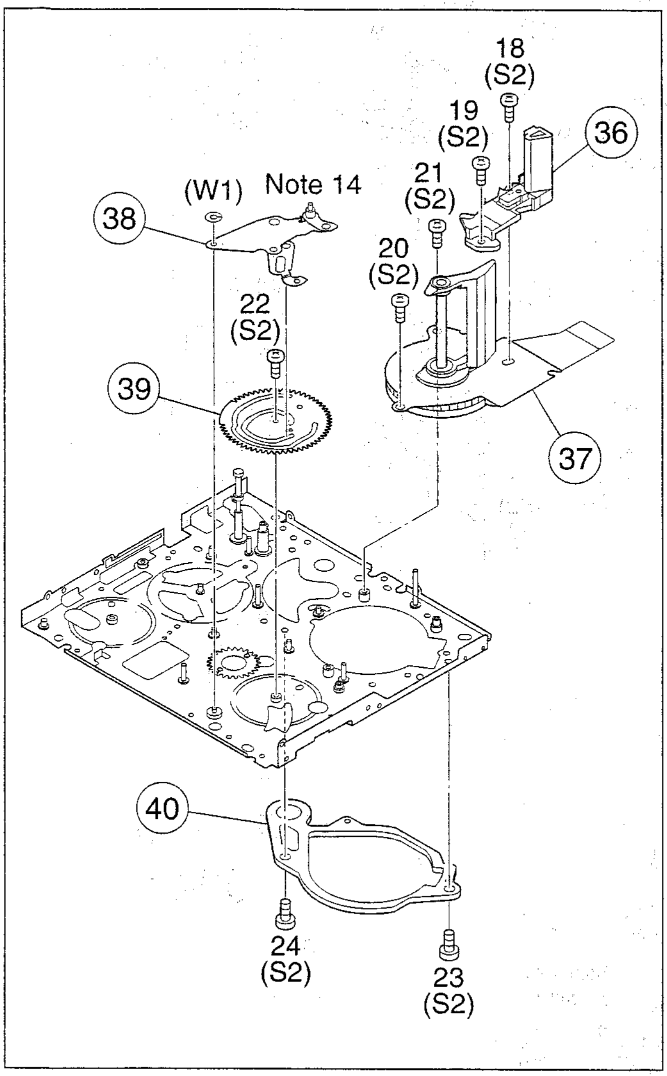
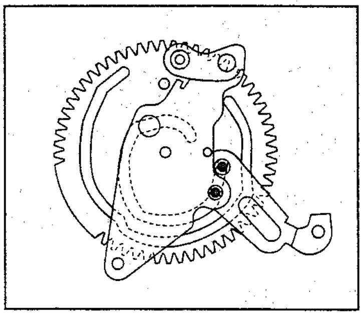
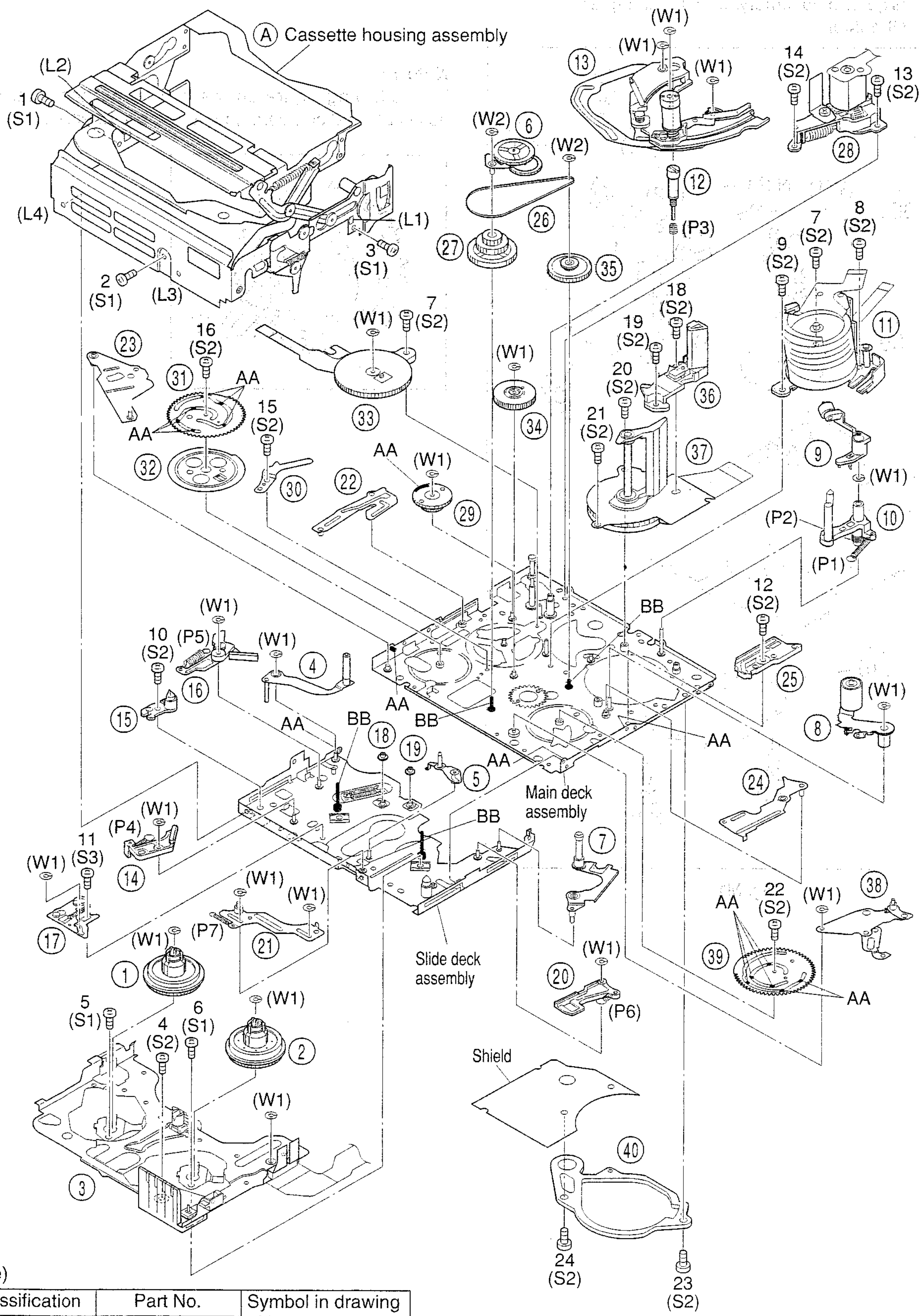

18
(S2)
19
(S2)
㊱
(W1)
Note 14
21
(S2)
㊳
20
(S2)
22
(S2)
㊴
㊲
㊵
24
(S2)
23
(S2)

Fig. M11

Note 14:
The following figure shows how to put the charge arm assembly and sub cam gear assembly together.



2.2.6 List of procedures for disassembly

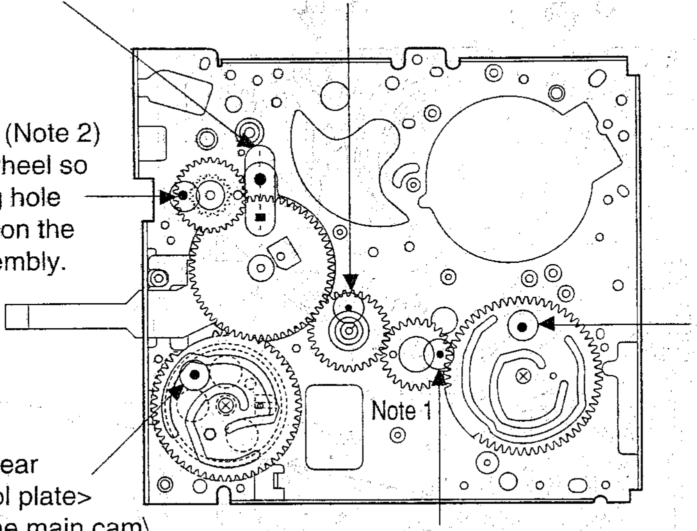

Ⓐ Cassette housing assembly
(L1)
(L2)
(L3)
(L4)
1 (S1)
2 (S1)
3 (S1)
⑬
(W1)
(W1)
(W1)
14 (S2)
13 (S2)
㉘
(W2) ⑥
(W2)
⑫
(P3)
㉖
㉗
㉟
7 (S2)
8 (S2)
9 (S2)
⑪
18 (S2)
19 (S2)
20 (S2)
㊱
21 (S2)
㊲
(W1) 7 (S2)
㉝
(W1)
㉞
㉓
16 (S2)
㉛
AA
AA
15 (S2)
㉜
㉚
㉒
AA (W1)
㉙
⑨
(W1)
(P2)
⑩
(P1)
12 (S2)
BB
㉕
(W1)
⑧
(W1)
10 (S2)
(P5)
(W1)
④
⑯
⑮
AA
AA
BB
BB
⑱
⑲
AA
⑤
AA
Main deck assembly
BB
㉔
(W1)
(P4)
11 (S3)
(W1)
⑭
⑰
⑦
(W1)
(W1)
㉑
(P7)
(W1)
①
AA
22 (S2)
(W1)
㊳
㊴
AA
Slide deck assembly
(W1)
⑳
(P6)
5 (S1)
4 (S2)
6 (S1)
(W1)
②
(W1)
③
Shield
㊵
24 (S2)
23 (S2)

Note)

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

Fig. 2-2-12

2.2.7 Checkup and adjustment of mechanism phase



<Rotary encoder>
Set the "#" of the rotary part at the tapped hole as shown in the figure.

<Connect gear> (Note 2)
Set the connect gear so that its locating hole meets the hole on the main deck assembly.

<Worm wheel> (Note 2)
Set the worm wheel so that its locating hole meets the hole on the main deck assembly.

<Sub cam gear>
Set the sub cam gear so that its locating hole meets the hole on the main deck assembly. This state represents that the mechanism is in the EJECT mode, which is the "mechanism assembly mode".

<Main cam gear /Brake control plate>
After fitting the main cam\ gear and brake control plat together,set them together so that their locating holes meet the hole on the main \ deck assembly.

<Connect gear 2> (Note 2)
Set the connect gear 2 so that its locating hole meets the hole on the main deck assembly.

Note 1:
Since the connect gear 2 is tightly fixed to the main deck by caulking, adjust its phase with the connect gear and sub cam gear.

Note 2:
The part that needs phase adjustment by the hole on the main deck assembly must exactly be set as the specified phase. There is a fear that some part is installed in a wrong phase because assembling of the mechanism is automated. If so, set every part in the correct phase whenever the mechanism is reassembled.

Fig. 2-2-13

2.2.8 Reassembling slide deck assembly and main deck assembly

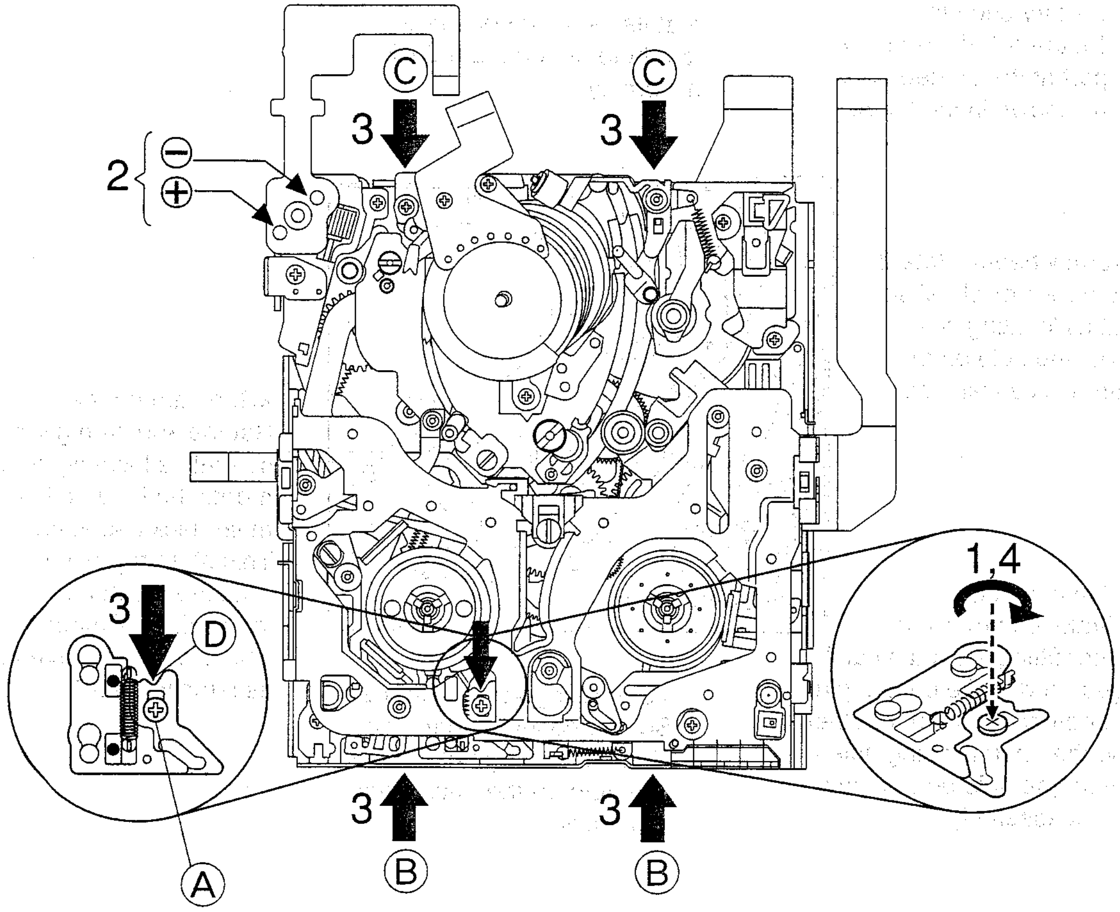


Fig. 2-2-14

Reassembling procedure

1. Loosen the screw Ⓐ.
2. Set the mechanism in the play mode. (Refer to page 2-2.)
3. Press the end face Ⓑ of the slide deck assembly (reel disk side) and the end face Ⓒ of the main deck assembly (drum assembly side) with uniform force so that the two assemblies are tightly pressed to each other. Furthermore, press the part Ⓓ and tighten the screw Ⓐ.

Note: *Tightening torque for screw Ⓐ: 0.03 N.m (0.3 kgf.cm)*

2.2.9 Locating tension pole

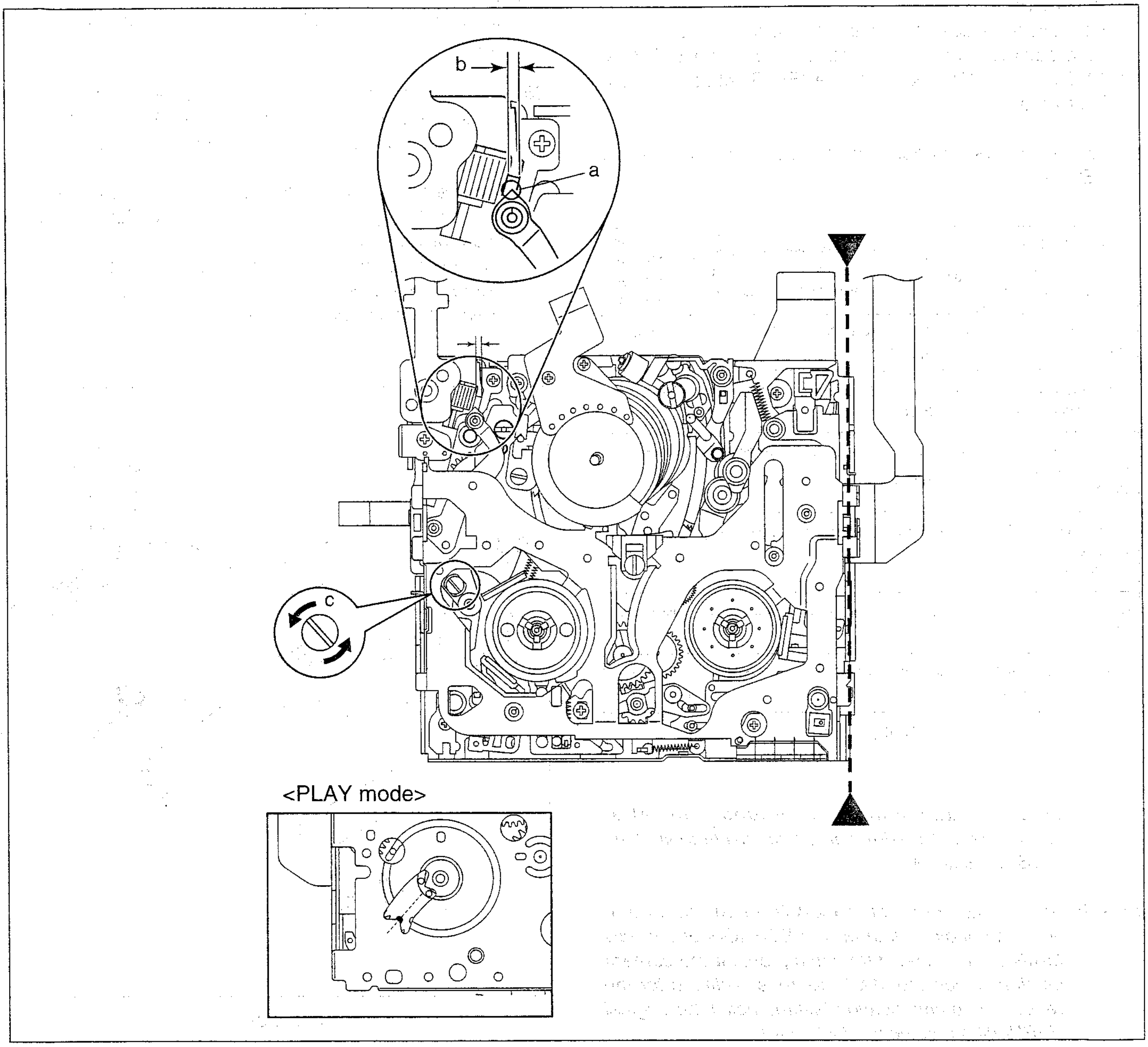


Fig. 2-2-15

Locating procedure

1. Enter the mechanism assembly into the PLAY mode. (Refer to page 2-2.)
2. When the " ▶-----◀ " part is positioned down, make sure that the part "a" of the tension arm assembly is located within the range of "b".
3. If the part "a" is out of the range, turn the pin "c" to adjust the position.

2.3 PROCEDURE OF COMPATIBILITY AND P.B. EQ. (ERROR RATE) ADJUSTMENTS

2.3.1 Precautions

Prior to starting disassembling and adjusting work, be sure to make a backup copy of the data stored in the EEPROM (IC1003 on the MAIN board) for the "EEPROM utility" of the SSS software.

Table 2-3-1 shows important service points for adjustment of P.B. EQ. (error rate).

Adjustment item / Service point	Linearity adjustment	P.B. Switching Point adjustment	Head Recording Current adjustment	Error rate (P.B. EQ). adjustment (SP/LP)
Replacement of DRUM	Necessary **Note 1**	Necessary	Necessary	Necessary
Replacement of parts of tape transport system	Necessary **Note 1**	Unnecessary	Unnecessary	Check
Repair of parts of tape transport system (DRUM)	Necessary **Note 1**	Unnecessary	Unnecessary	Check
Replacement of IC3502 (SECOND board, PRE/REC amp)	Unnecessary	Unnecessary	Unnecessary	Necessary
Replacement of IC3501 (MAIN board, P.B. EQ.)	Unnecessary	Unnecessary	Unnecessary	Necessary
Replacement of MAIN1 BOARD **Note 2**	Unnecessary	Necessary	Necessary	Necessary

Table 2-3-1

Note 1: *Linearity adjustment is needed only after replacement of the drum or replacement/repair of the TU/SUP guide rail.*

Note 2: *After replacement of the MAIN board, be sure to write the original data on the EEPROM of the new MAIN board. After data writing, adjust the camera section. When the MAIN board is replaced for the reason of communication failure, install the original EEPROM on the new MAIN board.*

If adjustment is needed for two or more items, proceed in adjustment of respective items in the following order.

2.3.3 Linearity adjustment

↓

2.3.4 PB switching point adjustment

↓

2.3.5 Head REC current adjustment

↓

2.3.6 P.B. EQ. (error rate) adjustment (both in SP and LP)

2.3.2 Preparation for adjustment

For actual adjustment, the set must be prepared as mentioned below. Refer to Fig. 2-3-1, too.

1. Remove four screws (1 to 4) first and the cassette cover next.

Note: *Screws that are asterisked (marked with ✻) in the shape column are fixed with screw lock agent. If such the screw is once removed, never use it again.*

2. Remove one screws (5) first and the cover (JIG) next.
3. Connect the jig connector cable (YTU93082C) to CN105 on the MAIN board.
   Turn the guide roller playing the alaignment tape, if it is needed for adjustment. Be careful not to scratch the exterior such as covers at that time.

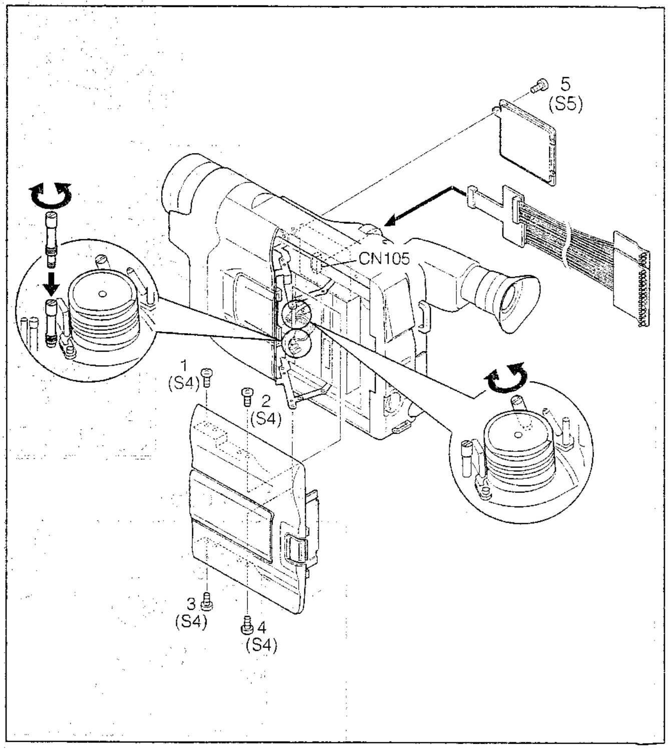
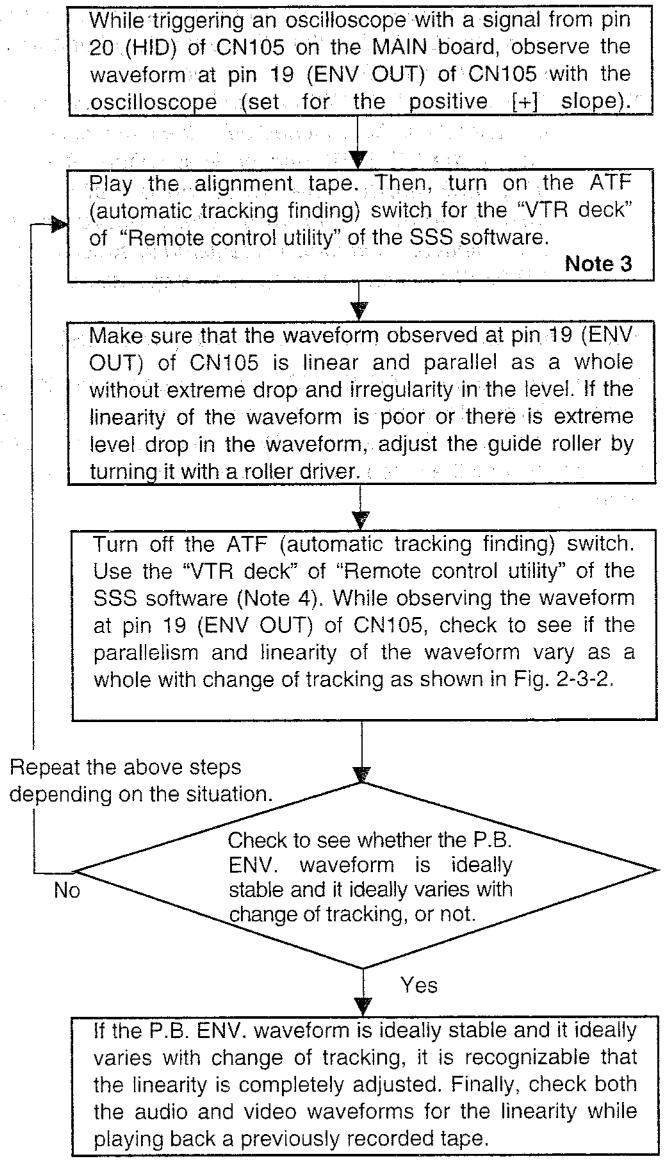


Fig. 2-3-1

2.3.3 Linearity adjustment

Procedure of linearity adjustment is shown by the following flowchart.



While triggering an oscilloscope with a signal from pin 20 (HID) of CN105 on the MAIN board, observe the waveform at pin 19 (ENV OUT) of CN105 with the oscilloscope (set for the positive [+] slope).

Play the alignment tape. Then, turn on the ATF (automatic tracking finding) switch for the "VTR deck" of "Remote control utility" of the SSS software. Note 3

Make sure that the waveform observed at pin 19 (ENV OUT) of CN105 is linear and parallel as a whole without extreme drop and irregularity in the level. If the linearity of the waveform is poor or there is extreme level drop in the waveform, adjust the guide roller by turning it with a roller driver.

Turn off the ATF (automatic tracking finding) switch. Use the "VTR deck" of "Remote control utility" of the SSS software (Note 4). While observing the waveform at pin 19 (ENV OUT) of CN105, check to see if the parallelism and linearity of the waveform vary as a whole with change of tracking as shown in Fig. 2-3-2.

Repeat the above steps depending on the situation.

Check to see whether the P.B. ENV. waveform is ideally stable and it ideally varies with change of tracking, or not.

If the P.B. ENV. waveform is ideally stable and it ideally varies with change of tracking, it is recognizable that the linearity is completely adjusted. Finally, check both the audio and video waveforms for the linearity while playing back a previously recorded tape.

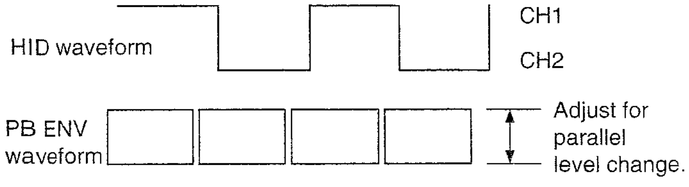


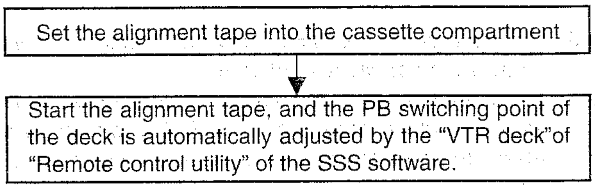
Fig. 2-3-2 P.B. ENV. Waveform

Note 3: *In case of the VHS tape recorder, the first tracking point can be locked by means of CTL pulse and DRUM FF when the automatic tracking (AT) function is off, because the VHS tape recorder has an A/C head. Therefore, the linearity of the VHS tape recorder is adjustable even when the AT is off.*
On the other hand, the linearity of the DVC cannot be adjusted when the automatic tracking finding (ATF) function is inactivated, because the DVC has no A/C head. When the ATF of the DVC is off, its tracking operation is effectuated only for the speed control system. Therefore, as time elapses, the DVC gradually fails in the servo control and it becomes hard to adjust the linearity.

Note 4: *In practice, if linearity adjustment is performed within a few minutes after the ATF is switched off, the state (ATF off) may be left out of consideration, because the speed servo of the DVC functions when the ATF is off.*

2.3.4 PB switching point adjustment

Procedure of PB switching point adjustment is shown by the following flowchart.

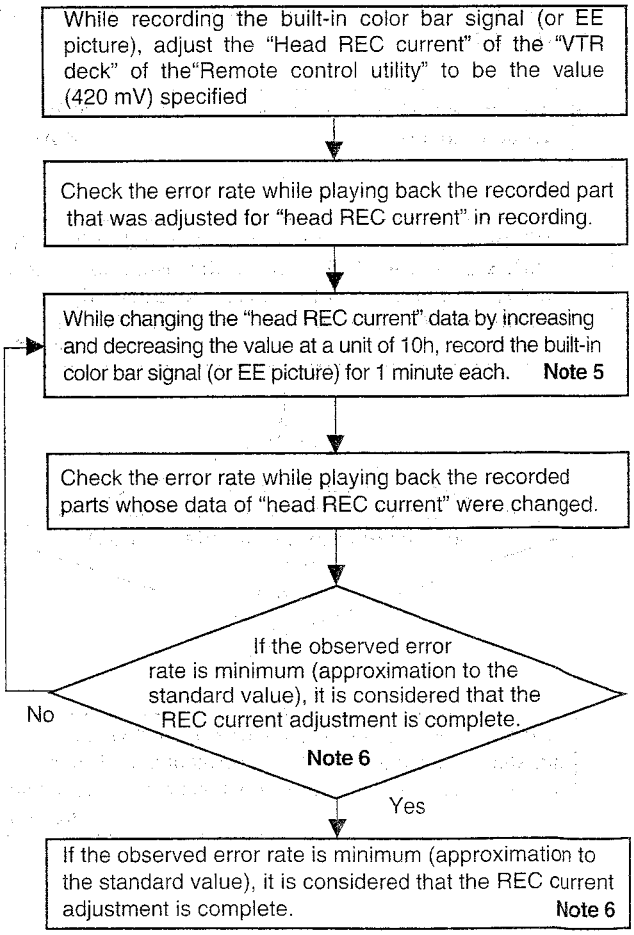


Set the alignment tape into the cassette compartment

Start the alignment tape, and the PB switching point of the deck is automatically adjusted by the "VTR deck"of "Remote control utility" of the SSS software.

2.3.5 Head REC current adjustment

Procedure of head REC current adjustment is shown by the following flowchart.



While recording the built-in color bar signal (or EE picture), adjust the "Head REC current" of the "VTR deck" of the"Remote control utility" to be the value (420 mV) specified

Check the error rate while playing back the recorded part that was adjusted for "head REC current" in recording.

While changing the "head REC current" data by increasing and decreasing the value at a unit of 10h, record the built-in color bar signal (or EE picture) for 1 minute each. Note 5

Check the error rate while playing back the recorded parts whose data of "head REC current" were changed.

If the observed error rate is minimum (approximation to the standard value), it is considered that the REC current adjustment is complete. Note 6

If the observed error rate is minimum (approximation to the standard value), it is considered that the REC current adjustment is complete. Note 6

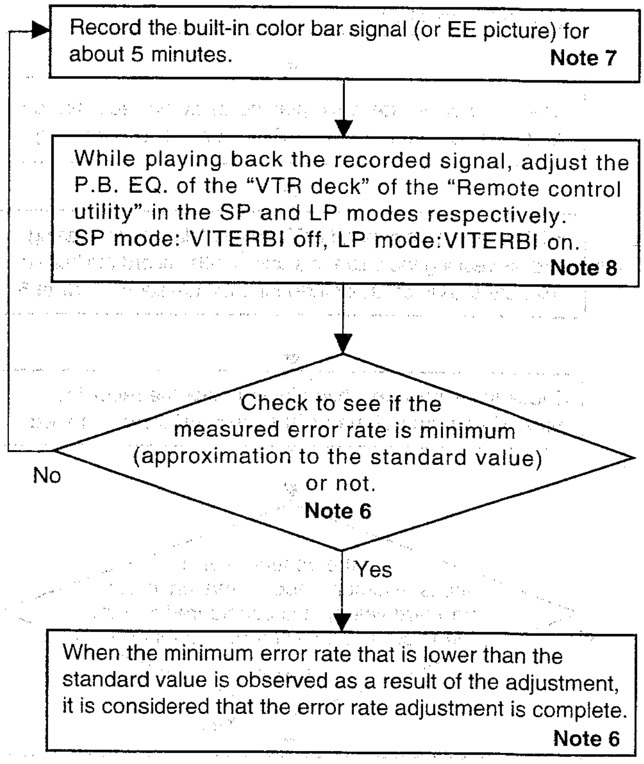
If the minimum error rate does not approximate to the standard value (see Note 7) in spite of repeated adjustments, clean the head and tape transport system. If cleaning has no effect on improvement of the error rate, it is thinkable that there is a failure in the head or the preamp shield, or the P.B. EQ. (error rate) is incompletely adjusted. In such the case, try to proceed in P.B. EQ. adjustment with the alignment tape prior to adjustment of "head REC current". In other words, if there is something abnormal in the playback system, the indication of the error rate is meaningless. Therefore, it is recommended to perform the "P.B. EQ. (error rate) adjustment" roughly with the alignment tape after completion of the "linearity adjustment" (to adjust error rate to be almost approximate to the standard value), because it facilitates the adjustment of the "head REC current".

Note 5: *The value of the "head REC current" specified on the software is not always optimum.*

Note 6: *In the strict sense of the word, "approximation to the standard value" means a value that is slightly lower than the specified value. Specified values are as follows.*
CH1 or CH2: Less than 1,500 (less than 3,000 in total of CH1 and CH2) with the VITERBI function off.
Difference between channels: Less than 10 times between CH1 and CH2.

2.3.6 P.B. EQ. (error rate) adjustment (for SP and LP)

Procedure of P.B. EQ. (error rate) adjustment is shown by the following flowchart.



Record the built-in color bar signal (or EE picture) for about 5 minutes. **Note 7**

While playing back the recorded signal, adjust the P.B. EQ. of the "VTR deck" of the "Remote control utility" in the SP and LP modes respectively.
SP mode: VITERBI off, LP mode:VITERBI on. **Note 8**

Check to see if the measured error rate is minimum (approximation to the standard value) or not. **Note 6**

When the minimum error rate that is lower than the standard value is observed as a result of the adjustment, it is considered that the error rate adjustment is complete. **Note 6**

Note 7: *It is advised to use a new cassette tape or an unrecorded part of a used cassette tape for recording. If a damaged tape is used for recording, it results not only in an error of the error rate measurement (measurement result becomes considerably higher than the real value) but also in loss of the reliability of adjustment.*

Note 8: *Switch off the VITERBI function in the playback mode, because it can be switched off in the playback mode only. If the VITERBI function is switched off in the playback mode, the switched-off status is automatically cancelled when playback is discontinued. Therefore, it is required to switch off the VITERBI function in every playback operation.*

2.3.7 Measurement method of P.B. EQ. (error rate)

Neither error rate jig (YTU93083) nor frequency counter is needed. Error rate is shown on the service support in three ways of video CH1, CH2 and total. When measuring error rate by channel, total the video and audio error rates on the same channel.

2.4 JIG CONNECTOR CABLE (YTU93082C) CONNECTION

Remove one screw (1) first and the cover (JIG) next.

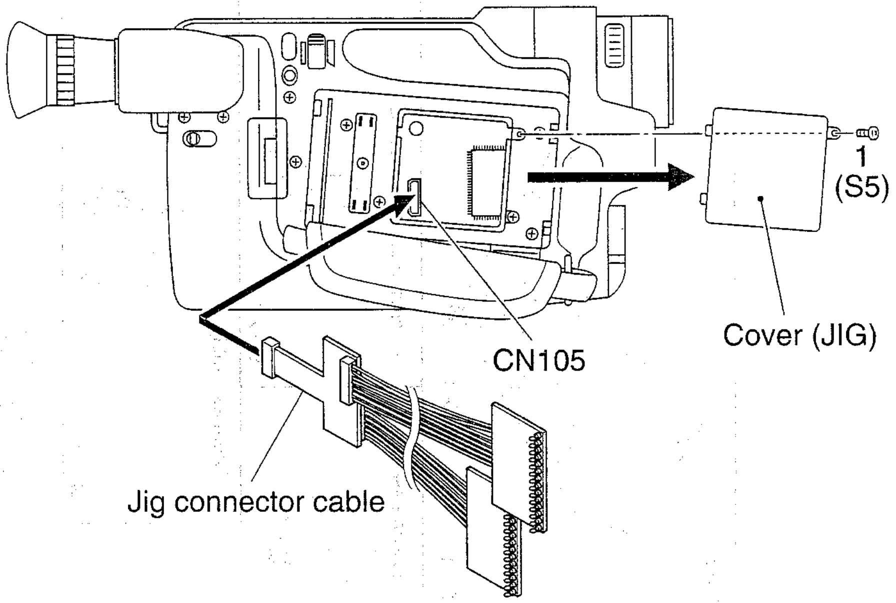

1
(S5)
Cover (JIG)
CN105
Jig connector cable

Fig. 2-4-1 Jig connector cable connection

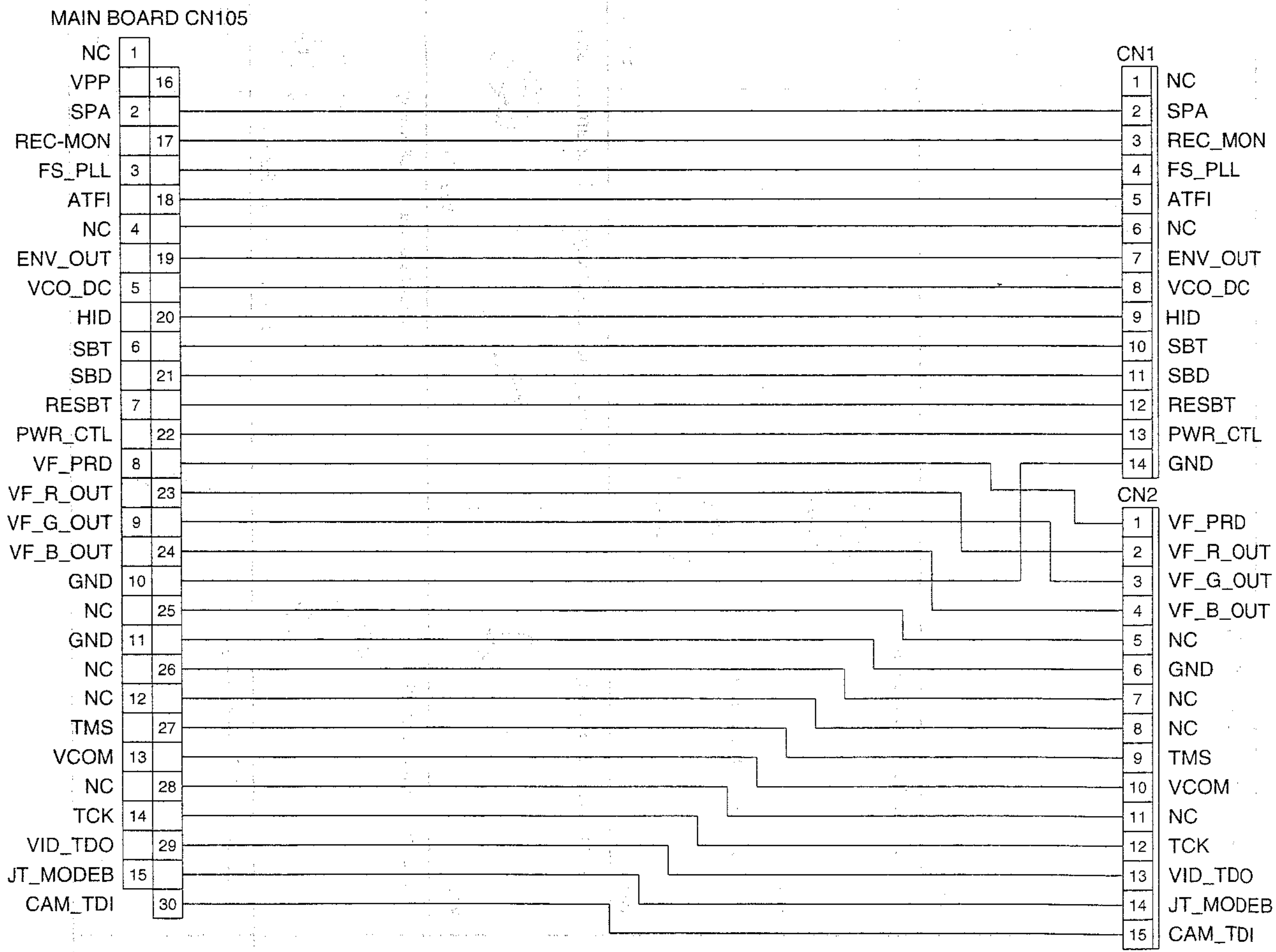
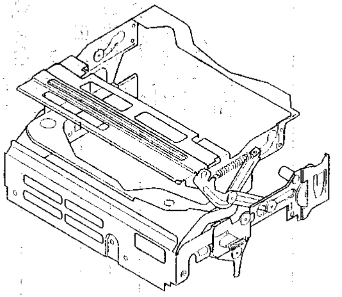
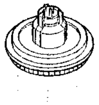
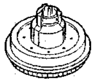
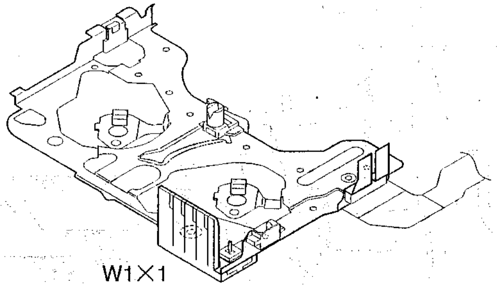
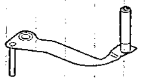
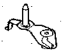
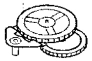
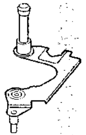
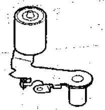
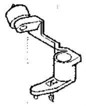
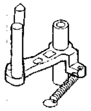
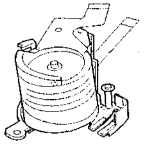
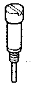
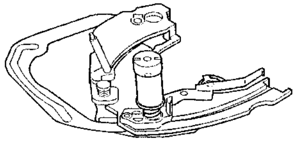
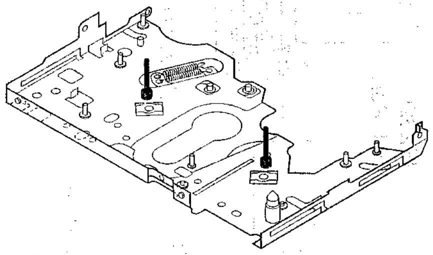
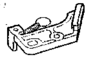
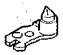
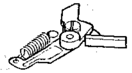
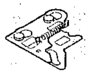
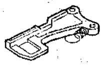
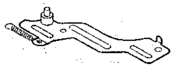
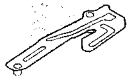
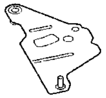
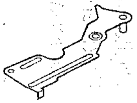
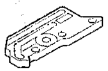
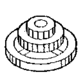
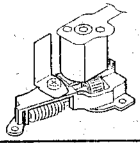
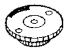
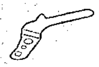
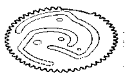
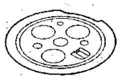
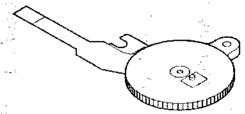
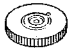
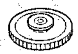
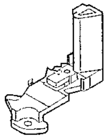
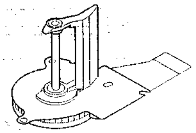
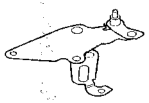
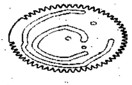
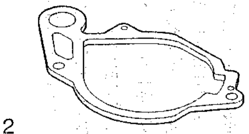

MAIN BOARD CN105
NC 1
VPP 16
SPA 2
REC-MON 17
FS_PLL 3
ATFI 18
NC 4
ENV_OUT 19
VCO_DC 5
HID 20
SBT 6
SBD 21
RESBT 7
PWR_CTL 22
VF_PRD 8
VF_R_OUT 23
VF_G_OUT 9
VF_B_OUT 24
GND 10
NC 25
GND 11
NC 26
NC 12
TMS 27
VCOM 13
NC 28
TCK 14
VID_TDO 29
JT_MODEB 15
CAM_TDI 30
CN1
1 NC
2 SPA
3 REC_MON
4 FS_PLL
5 ATFI
6 NC
7 ENV_OUT
8 VCO_DC
9 HID
10 SBT
11 SBD
12 RESBT
13 PWR_CTL
14 GND
CN2
1 VF_PRD
2 VF_R_OUT
3 VF_G_OUT
4 VF_B_OUT
5 NC
6 GND
7 NC
8 NC
9 TMS
10 VCOM
11 NC
12 TCK
13 VID_TDO
14 JT_MODEB
15 CAM_TDI

Fig. 2-4-2 Jig connector cable schematic diagram

2.5 SERVICE NOTE

Use the following chart to manage mechanism parts that are removed for disassembling the mechanism.

No.	Part	Drawing	Screws
1	Ⓐ Cassette housing assembly		S1×3
2	① Reel disk (SUP) assembly		W1×1
	② Reel disk (TU) assembly		W1×1
	③ Reel cover assembly		S1×2 S2×1 W1×1
3	④ Tension arm assembly		W1×1
	⑤ Release guide assembly		
	⑥ Idler arm assembly		W2×1
	⑦ Guide arm assembly		
	⑧ Pinch roller arm assembly		W1×1
4	⑨ Cleaner arm assembly		
	⑩ Slant pole arm assembly		W1×1 P1×1 P2×1
	⑪ Drum assembly		S2×3
5	⑫ Guide roller (S) assembly		P3×1
	⑬ Rail assembly		W1×3

6	Ⓑ Slide deck assembly  W1×1					
7	⑭ Loading brake assembly  W1×1 P4×1	⑮ Guide pin (SUPPLY)  S2×1	⑯ Pad arm assembly  W1×1 P5×1	⑰ Slide guide plate assembly  S3×1		
	⑱ Collar 	⑲ Collar 	⑳ Sub brake assembly  W1×1 P6×1	㉑ Control plate assembly  W1×2 P7×1		
8	㉒ Tension lever assembly 	㉓ Slide lever assembly 	㉔ Brake control lever assembly 			
9	㉕ Loading guide  S2×1	㉖ Timing belt 	㉗ Center gear assembly 	㉘ Motor bracket assembly  S2×2	㉙ Worm wheel  W1×1	㉚ Gear holder  S2×1
10	㉛ Main cam gear  S2×1	㉜ Brake control plate 	㉝ Rotary encoder  S2×1 W1×1	㉞ Connect gear  W1×1	㉟ Reel drive pulley assembly  W2×1	
11	㊱ Catcher (T) assembly  S2×2	㊲ Capstan motor  S2×2	㊳ Charge arm assembly  W1×1	㊴ Sub cam gear  S2×1	㊵ PWB holder  S2×2	

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT

3.1.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR). General deck system and camera system adjustment are not required. However, if MAIN board need replacement, please use original E²PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-4). Please contact to JVC Service for detaile information.

- OP block
- COLOR E.VF
- E²PROM (IC1003 of MAIN board)

In the event of malfunction with electrical circuits, troubleshooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between operation un it and DECK chassis.

2. Required test equipment

1. Color TV monitor.
2. AC power adapter
3. Oscilloscope (dual-trace type, observable 100 MHz or higher frequency)
   * It is recommended to use one observable 300 MHz or higher frequency.
4. Digital voltmeter
5. Frequency counter (with threshold level adjuster)
6. Personal computer

3. Required adjustment tools

For detsails of special jigs necessary for adjustment, refer to page 1-2 and 1-3 of the Section 1.

4. Setup for E. VF section adjustment

Referring to "SEC. 1 DISASSEMBLY" and connect the E. VF FPC to CN104 of the MAIN board.

NOTE:

- *This adjustment falls into a special adjustment that requires a personal computer. For details, refer to "3.1.1 Preparation"'.*

5. Connections for Service support system

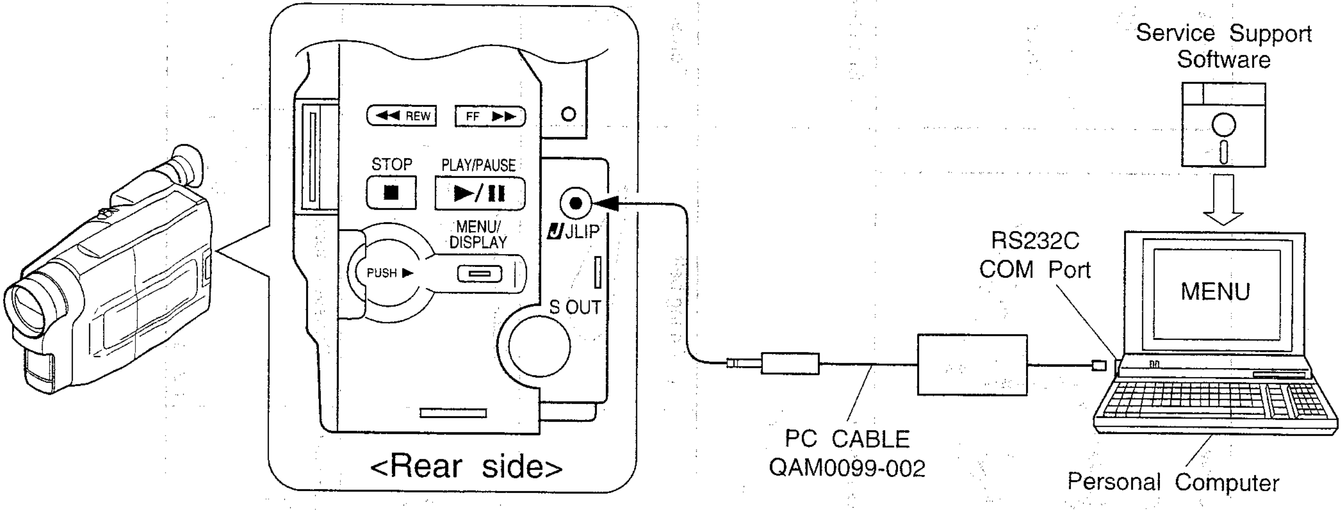


Fig. 3-1-1 Connection for Service support system

■ FUSE LOCATION FOR MAIN

MAIN PWB
-FOIL SIDE-

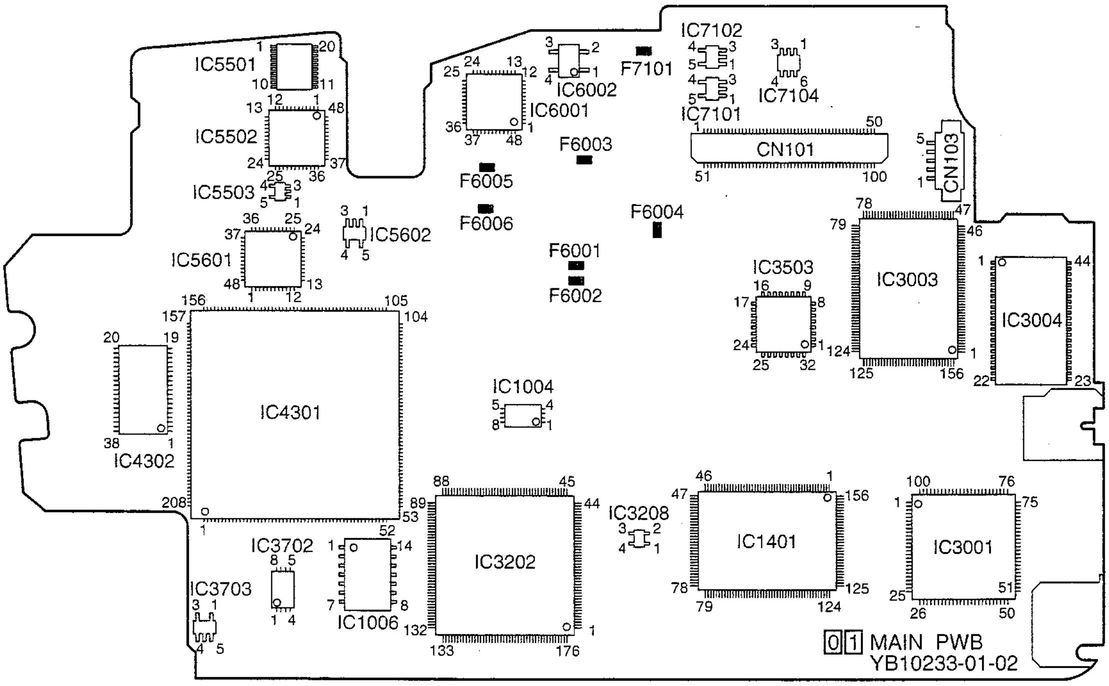

IC5501
IC5502
IC5503
IC5601
IC5602
IC6001
IC6002
F7101
IC7102
IC7101
IC7104
CN101
CN103
F6003
F6005
F6006
F6004
F6001
F6002
IC3503
IC3003
IC3004
IC4301
IC4302
IC1004
IC3202
IC3208
IC1401
IC3001
IC3702
IC3703
IC1006
01 MAIN PWB
YB10233-01-02

Fig. 3-1-2 FUSE location for MAIN board assembly (FOIL side)

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

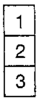
1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

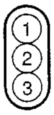
AUX : Active at high.

$\overline{\text{AUX}}$ or AUX(L) : Active at low.

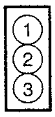
3. Interpreting Connector indications



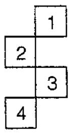
Removable connector



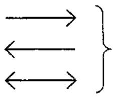
Wire soldered directly on board



Non-removable Board connector



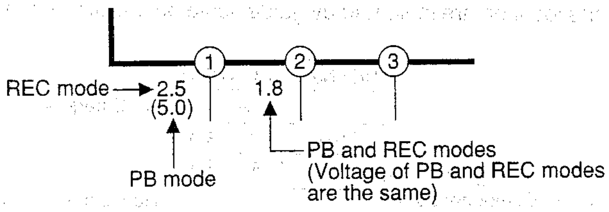
Board to Board



Connected pattern on board
The arrows indicate signal path

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.

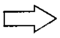


Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

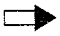
5. Signal path Symbols

The arrows indicate the signal path as follows.

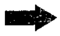
NOTE : The arrow is DVC unique object.



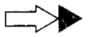
Playback signal path



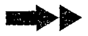
Playback and recording signal path



Recording signal path
(including E-E signal path)

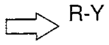


Capstan servo path



Drum servo path

(Example)

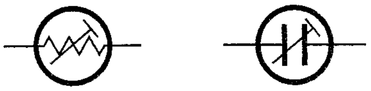


Playback R-Y signal path

Recording Y signal path

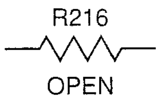
6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



CIRCUIT BOARD NOTES

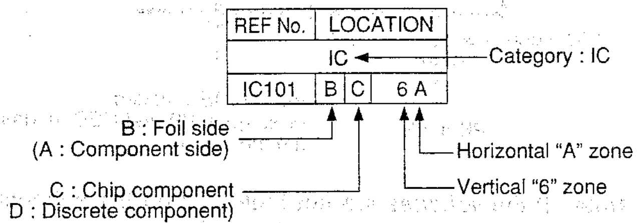
1. Foil and Component sides

1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.

2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

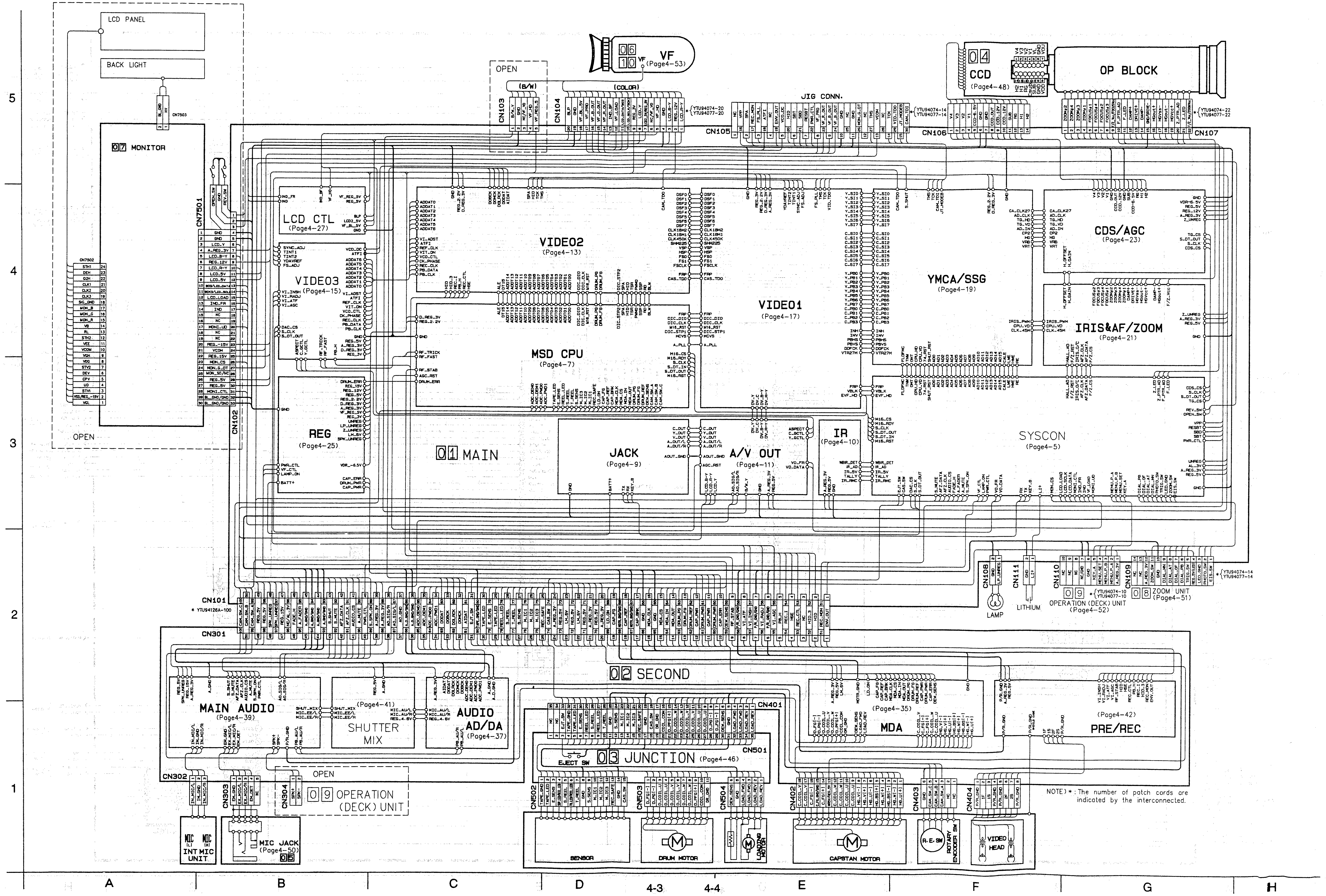
2. Parts location guides

Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
C : Chip component
D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

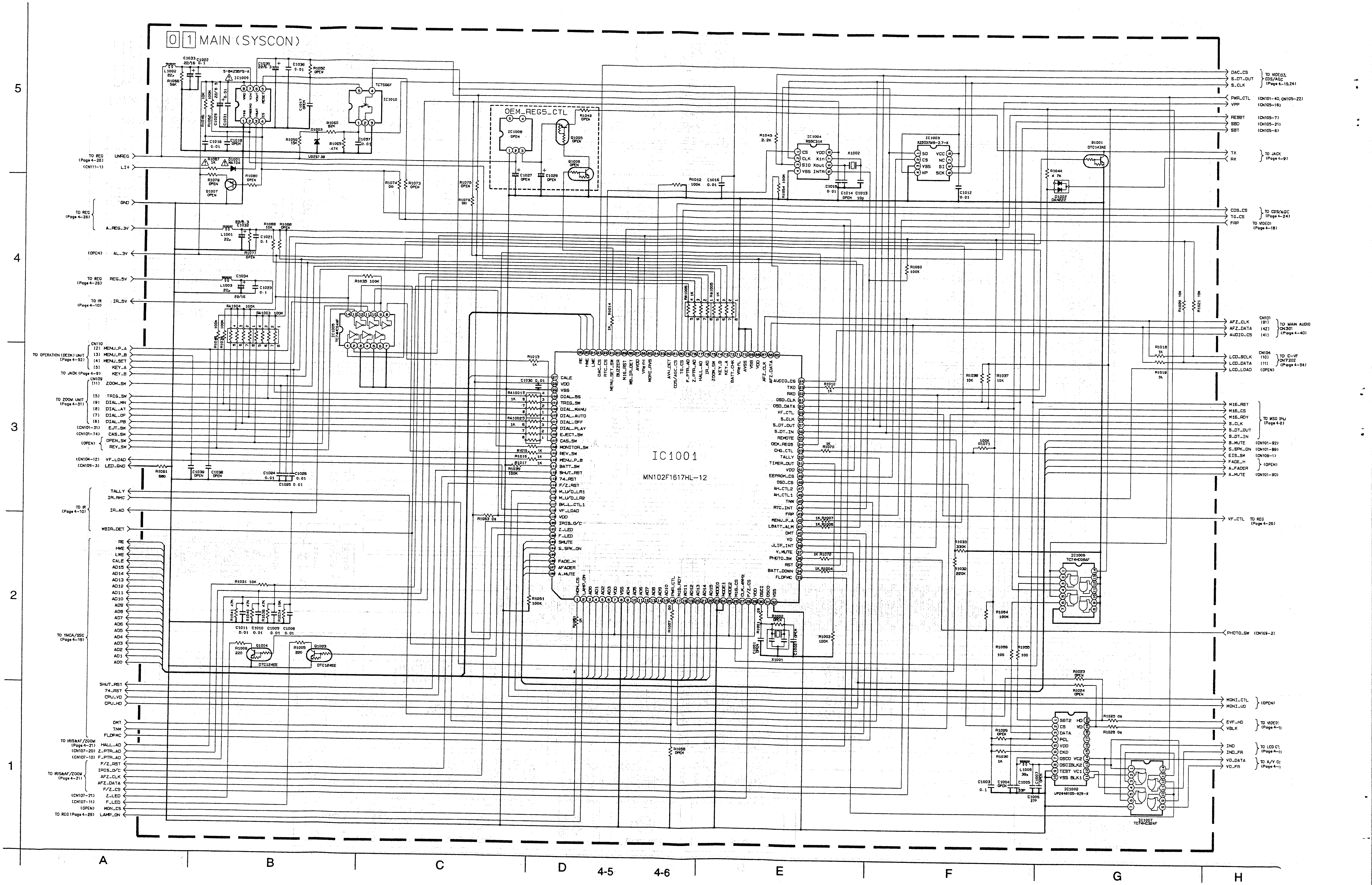
Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS

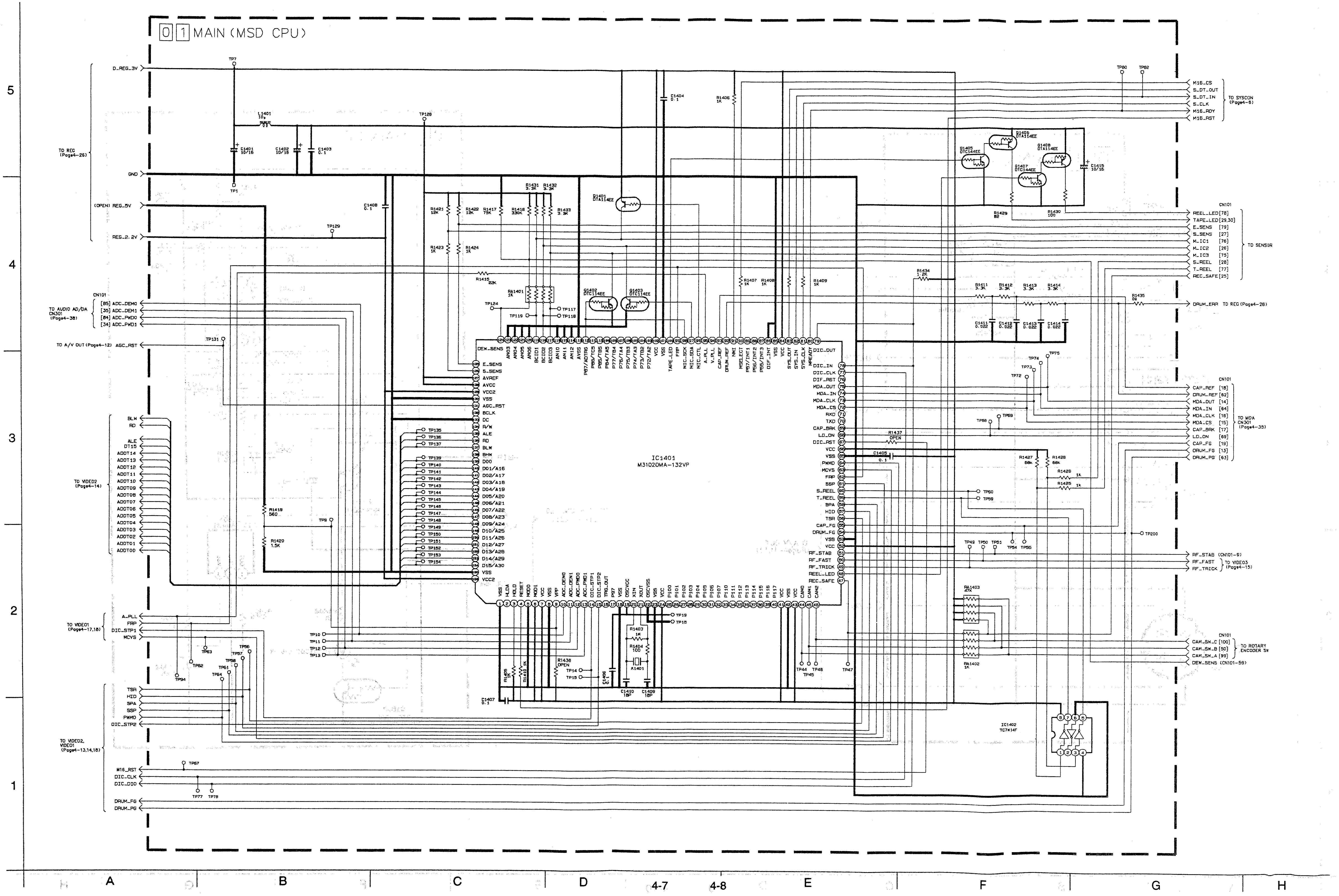

LCD PANEL
BACK LIGHT
07 MONITOR
CN7501
CN7502
CN7503
OPEN
CN102
VF
(Page4-53)
CN103
CN104
(B/W)
(COLOR)
JIG CONN.
CN105
04 CCD
(Page4-48)
CN106
OP BLOCK
CN107
LCD CTL
(Page4-27)
VIDEO3
(Page4-15)
REG
(Page4-25)
VIDEO2
(Page4-13)
MSD CPU
(Page4-7)
01 MAIN
JACK
(Page4-9)
A/V OUT
(Page4-11)
VIDEO1
(Page4-17)
IR
(Page4-10)
YMCA/SSG
(Page4-19)
CDS/AGC
(Page4-23)
IRIS&AF/ZOOM
(Page4-21)
SYSCON
(Page4-5)
CN108
LAMP
CN111
LITHIUM
CN110
09 OPERATION (DECK) UNIT
(Page4-52)
CN109
08 ZOOM UNIT
(Page4-51)
CN101
CN301
02 SECOND
MAIN AUDIO
(Page4-39)
SHUTTER MIX
(Page4-41)
AUDIO AD/DA
(Page4-37)
MDA
(Page4-35)
PRE/REC
(Page4-42)
CN401
03 JUNCTION
(Page4-46)
CN501
EJECT SW
CN302
CN303
CN304
09 OPERATION (DECK) UNIT
INT MIC UNIT
MIC JACK
(Page4-50)
05
CN502
SENSOR
CN503
DRUM MOTOR
CN504
LOADING MOTOR
CN402
CAPSTAN MOTOR
CN403
R.E.SW
ROTARY ENCODER SW
CN404
VIDEO HEAD
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTE) *: The number of patch cords are indicated by the interconnected.

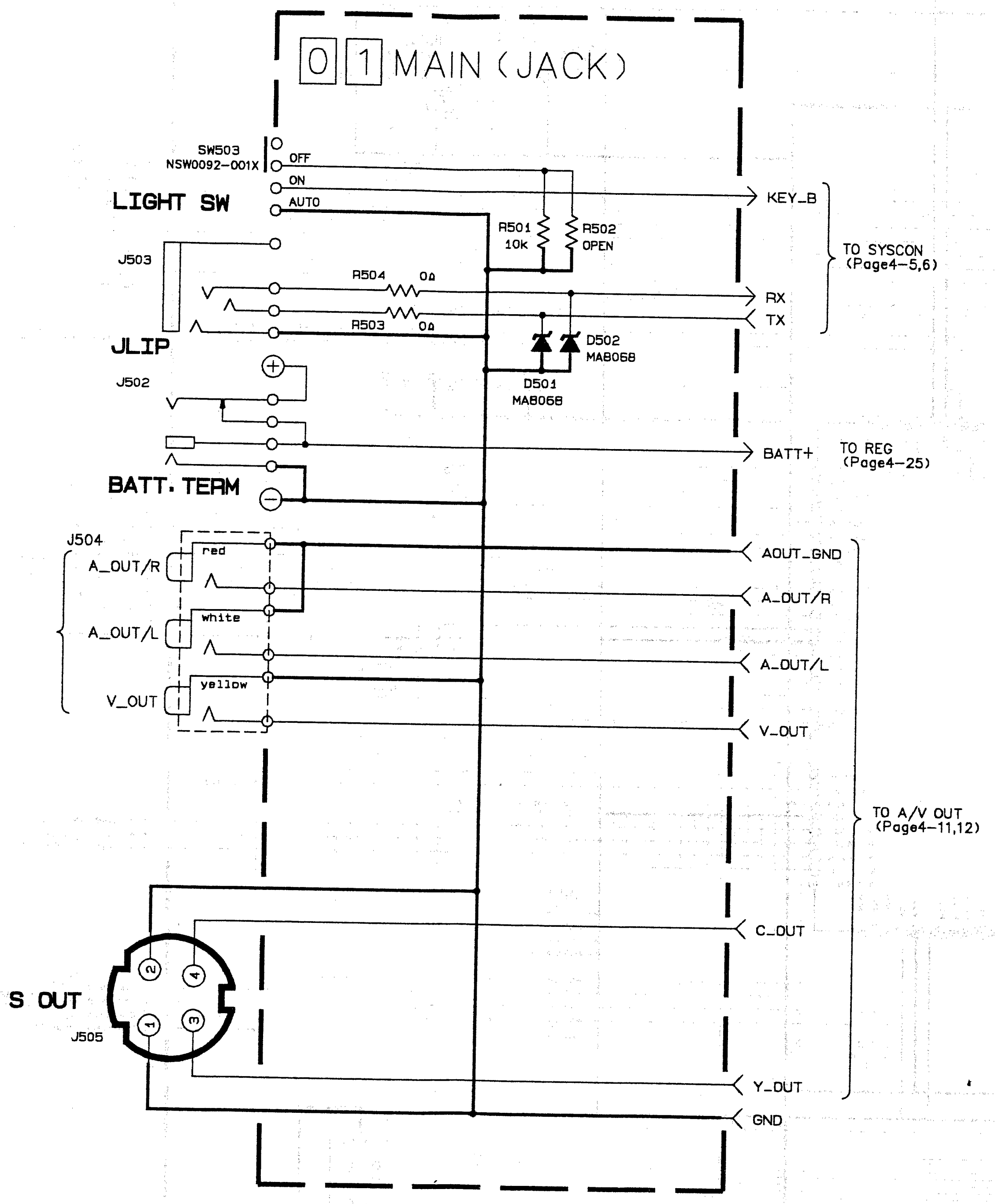
4.2 SYSCON SCHEMATIC DIAGRAM

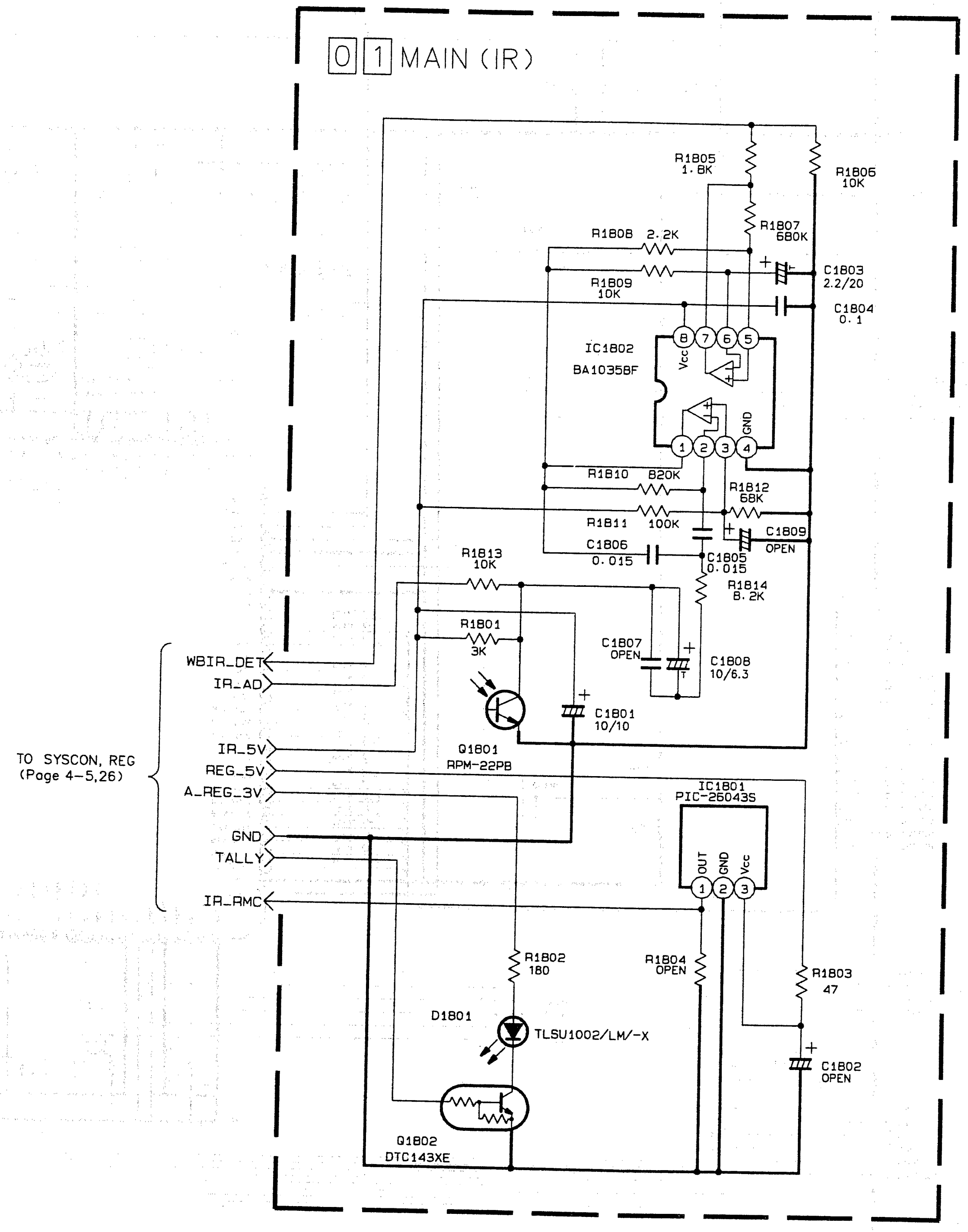

01 MAIN (SYSCON)
IC1001
MN102F1617HL-12
OEM_REG5_CTL
IC1009 S-84238FS-K
IC1010 TC7S66F
IC1008
IC1004 R55C314
IC1003 X25097M8-2.7-X
Q1001 DTC143XE
IC1005 TC74HC04AF
IC1006 TC74HC08AF
IC1002 UPD6461GS-929-X
IC1007 TC74HC32AF
Q1004 DTC124EE
Q1003 DTC124EE
X1001
X1002
D1003 UDZS7.5B
D1001 MA704
D1002 DA222
TO REG (Page 4-26) UNREG
(CN111-1) LI+
GND
TO REG (Page 4-26) A_REG_3V
(OPEN) AL_3V
TO REG (Page 4-26) REG_5V
TO IR (Page 4-10) IR_5V
CN110
TO OPERATION (DECK) UNIT (Page 4-52) MENU_P_A MENU_P_B MENU_SET KEY_A
TO JACK (Page 4-9) KEY_B
CN109 ZOOM_SW
TO ZOOM UNIT (Page 4-51) TRIG_SW DIAL_MN DIAL_AT DIAL_OF DIAL_PB
(CN101-31) EJT_SW
(CN101-74) CAS_SW
(OPEN) OPEN_SW REV_SW
(CN104-12) VF_LOAD
(CN109-3) LED_GND
TALLY
IR_RMC
TO IR (Page 4-10) IR_AD
WBIR_DET
RE HWE LWE CALE AD15 AD14 AD13 AD12 AD11 AD10 AD9 AD8 AD7 AD6 AD5 AD4 AD3 AD2 AD1 AD0
TO YMCA/SSC (Page 4-19)
SHUT_RST 74_RST CPU_VD CPU_HD
DMT TNM FLDFMC
TO IRIS&AF/ZOOM (Page 4-21) HALL_AD
(CN107-20) Z_PTR_AD
(CN107-10) F_PTR_AD
F/Z_RST IRIS_O/C
TO IRIS&AF/ZOOM (Page 4-21) AFZ_CLK AFZ_DATA F/Z_CS
(CN107-21) Z_LED
(CN107-11) F_LED
(OPEN) MON_CS
TO REG (Page 4-26) LAMP_ON
DAC_CS S_DT_OUT S_CLK TO VIDEO3, CDS/AGC (Page 4-15,24)
PWR_CTL (CN101-40, CN105-22)
VPP (CN105-16)
RESET (CN105-7)
SBD (CN105-21)
SBT (CN105-6)
TX RX TO JACK (Page 4-9)
CDS_CS TG_CS TO CDS/AGC (Page 4-24)
FRP TO VIDEO1 (Page 4-18)
AFZ_CLK AFZ_DATA AUDIO_CS CN101 TO MAIN AUDIO CN301 (Page 4-40)
LCD_SCLK LCD_DATA LCD_LOAD CN104 TO C-VF CN7202 (Page 4-54) (OPEN)
M16_RST M16_CS M16_RDY S_CLK S_DT_OUT S_DT_IN TO MSD CPU (Page 4-8)
S_MUTE (CN101-92)
S_SPK_ON (CN101-89)
EIS_SW (CN109-1)
FADE_H A_FADER (OPEN)
A_MUTE (CN101-90)
VF_CTL TO REG (Page 4-26)
PHOTO_SW (CN109-2)
MONI_CTL MONI_VD (OPEN)
EVF_HD VBLK TO VIDEO1 (Page 4-1)
IND IND_FR TO LCD CT (Page 4-)
VO_DATA VO_FR TO A/V (Page 4-)
A B C D E F G H
1 2 3 4 5

4.3 MSD CPU SCHEMATIC DIAGRAM


0 1 MAIN (MSD CPU)
5
4
3
2
1
A
B
C
D
E
F
G
H
D_REG_3V
GND
(OPEN) REG_5V
REG_2.2V
TO REG (Page4-26)
TP7
TP1
L1401 10μ
C1401 10/16
C1402 10/16
C1403 0.1
TP128
TP129
C1408 0.1
C1404 0.1
R1406 1K
R1421 12K
R1422 12K
R1417 75K
R1418 330K
R1431 3.3K
R1432 3.3K
R1433 3.3K
R1423 1K
R1424 1K
R1415 22K
RA1401 1K
Q1401 DTA114EE
Q1402 DTC144EE
Q1403 DTC144EE
TP124
TP119
TP117
TP118
R1407 1K
R1408 1K
R1409 1K
R1434 1.2K
Q1405 DTC144EE
Q1406 DTA114EE
Q1407 DTC144EE
Q1408 DTA114EE
C1415 10/16
R1429 82
R1430 100
R1411 3.3K
R1412 3.3K
R1413 3.3K
R1414 3.3K
C1411 0.022
C1412 0.022
C1413 0.022
C1414 0.022
R1435 0Ω
TP80
TP82
M16_CS
S_DT_OUT
S_DT_IN
S_CLK
M16_RDY
M16_RST
TO SYSCON (Page4-8)
CN101
REEL_LED [78]
TAPE_LED [29,30]
E_SENS [79]
S_SENS [27]
M_IC1 [76]
M_IC2 [26]
M_IC3 [75]
S_REEL [28]
T_REEL [77]
REC_SAFE [25]
TO SENSOR
DRUM_ERR TO REG (Page4-26)
CN101
[85] ADC_DEM0
[35] ADC_DEM1
[84] ADC_PWD0
[34] ADC_PWD1
TO AUDIO AD/DA CN301 (Page4-38)
TO A/V OUT (Page4-12) AGC_RST
TP131
BLW
RD
ALE
DT15
ADDT14
ADDT13
ADDT12
ADDT11
ADDT10
ADDT09
ADDT08
ADDT07
ADDT06
ADDT05
ADDT04
ADDT03
ADDT02
ADDT01
ADDT00
TO VIDEO2 (Page4-14)
R1419 560
R1420 1.5K
TP9
TP135
TP136
TP137
TP139
TP140
TP141
TP142
TP143
TP144
TP145
TP146
TP147
TP148
TP149
TP150
TP151
TP152
TP153
TP154
DEW_SENS
E_SENS
S_SENS
AVREF
AVCC
VCC2
VSS
AGC_RST
BCLK
DC
R/W
ALE
RD
BLW
BHW
D00
D01/A16
D02/A17
D03/A18
D04/A19
D05/A20
D06/A21
D07/A22
D08/A23
D09/A24
D10/A25
D11/A26
D12/A27
D13/A28
D14/A29
D15/A30
VSS
VCC2
AN03
AN04
AN05
AN06
BCID1
BCID2
BCID3
AN10
AN11
AN12
AVSS
P87/ADTRG
P86/TC5
P85/TB5
P84/TA5
P77/TA4
P76/TB4
P75/TA3
P74/TA3
P73/TB2
P72/TA2
VCC
VSS
TAPE_LED
FRP
MIC_SCK
MIC_SDA
MIC_CTL
A_PLL
V_PLL
CAP_REF
DRUM_REF
NMI
MSELECT
P57/INT1
P56/INT2
P55/INT3
DIF_INT
VSS
VCC
SYS_OUT
SYS_IN
SYS_CLK
MREADY
DIC_OUT
DIC_IN
DIC_CLK
DIF_RST
MDA_OUT
MDA_IN
MDA_CLK
MDA_CS
RXD
TXD
CAP_BRK
LD_ON
DIC_RST
VCC
VSS
PWMO
MCVS
FRP
SSP
S_REEL
T_REEL
SPA
HID
TSR
CAP_FG
DRUM_FG
VSS
VCC
RF_STAB
RF_FAST
RF_TRICK
REEL_LED
REC_SAFE
VSS
HLDA
HOLD
RESET
MOD0
MOD1
VCC
VSS
VPP
ADC_DEM0
ADC_DEM1
ADC_PWD0
ADC_PWD1
DIC_STP1
DIC_STP2
TRG_OUT
P97
VSS
OSCVCC
XIN
XOUT
OSCVSS
VSS
VCC
P100
P101
P102
P103
P104
P105
P106
P107
P110
P111
P112
P113
P114
P115
P116
P117
VCC
VSS
CAM0
CAM1
CAM2
IC1401
M31020MA-132VP
TP74
TP75
TP73
TP72
CN101
CAP_REF [18]
DRUM_REF [62]
MDA_OUT [14]
MDA_IN [64]
MDA_CLK [16]
MDA_CS [15]
CAP_BRK [17]
LD_ON [69]
CAP_FG [19]
DRUM_FG [13]
DRUM_PG [63]
TO MDA CN301 (Page4-35)
TP68
TP69
R1437 OPEN
C1405 0.1
R1427 68K
R1428 68K
R1426 1K
R1425 1K
TP60
TP59
TP200
TP49
TP50
TP51
TP54
TP55
RF_STAB (CN101-9)
RF_FAST
RF_TRICK
TO VIDEO3 (Page4-15)
RA1403 47K
RA1402 1K
CN101
CAM_SW_C [100]
CAM_SW_B [50]
CAM_SW_A [99]
DEW_SENS (CN101-59)
TO ROTARY ENCODER SW
IC1402 TC7W14F
A_PLL
FRP
DIC_STP1
MCVS
TO VIDEO1 (Page4-17,18)
TP10
TP11
TP12
TP13
TP63
TP62
TP34
TP56
TP57
TP58
TP61
TP64
R1436 OPEN
TP14
TP15
R1405 1K
R1410 1K
C1407 0.1
C1406
R1403 1M
R1404 100
X1401
C1410 18P
C1409 18P
TP19
TP18
TP44
TP48
TP45
TP47
TSR
HID
SPA
SSP
PWMO
DIC_STP2
TO VIDEO2, VIDEO1 (Page4-13,14,18)
TP67
M16_RST
DIC_CLK
DIC_DIO
TP77
TP78
DRUM_FG
DRUM_PG

4.4 JACK AND IR SCHEMATIC DIAGRAMS

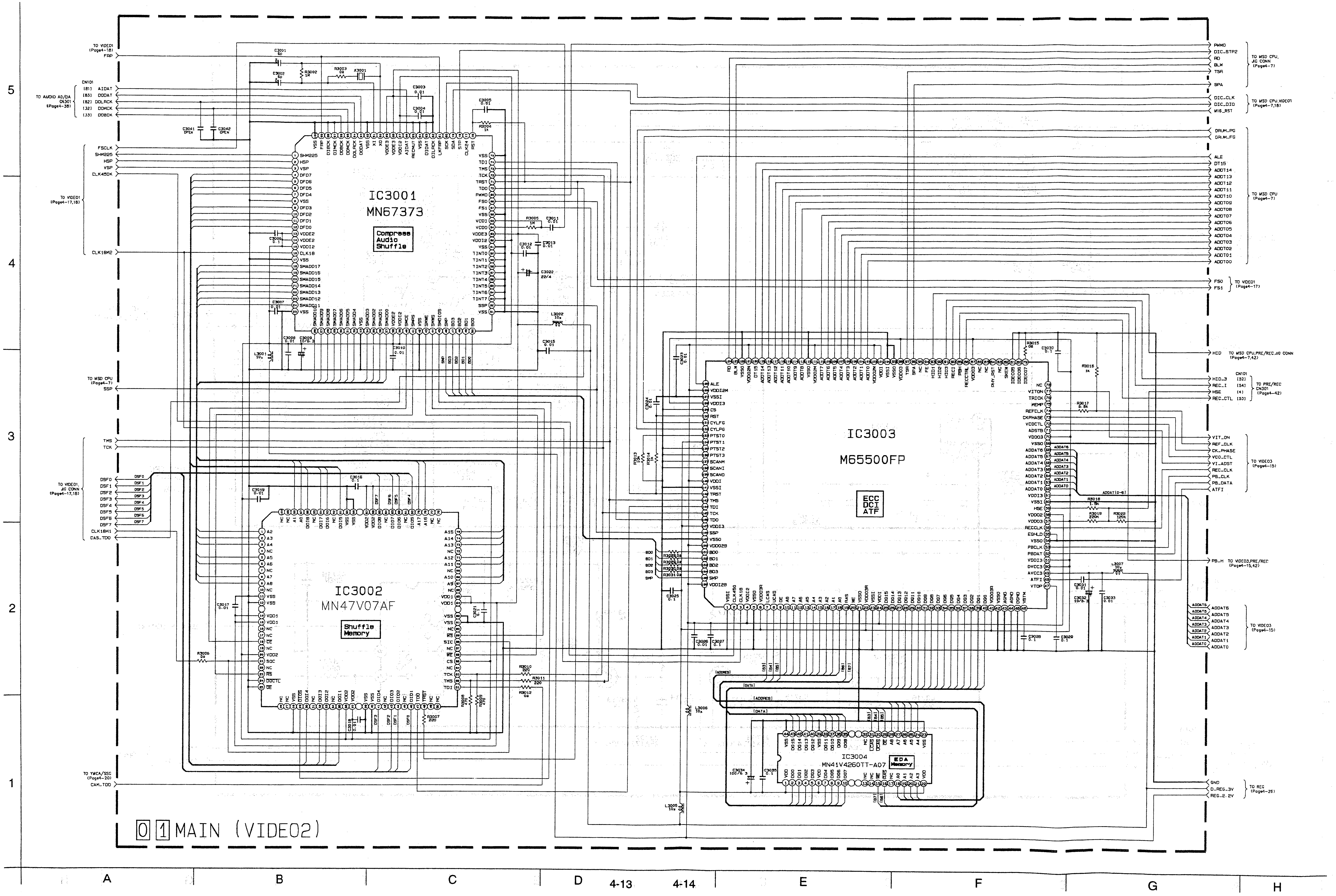

0 1 MAIN (JACK)
SW503
NSW0092-001X
OFF
ON
AUTO
LIGHT SW
J503
JLIP
R504 0Ω
R503 0Ω
R501 10K
R502 OPEN
D502 MA8058
D501 MA8058
KEY_B
RX
TX
TO SYSCON (Page4-5,6)
J502
BATT+
TO REG (Page4-25)
BATT. TERM
J504
A_OUT/R
red
A_OUT/L
white
V_OUT
yellow
AOUT_GND
A_OUT/R
A_OUT/L
V_OUT
TO A/V OUT (Page4-11,12)
C_OUT
Y_OUT
GND
S OUT
J505
1
2
3
4


0 1 MAIN (IR)
R1805 1.8K
R1806 10K
R1807 680K
R1808 2.2K
R1809 10K
C1803 2.2/20
C1804 0.1
IC1802
BA10358F
Vcc
GND
8 7 6 5
1 2 3 4
R1810 820K
R1811 100K
R1812 68K
C1809 OPEN
C1806 0.015
C1805 0.015
R1813 10K
R1814 8.2K
R1801 3K
C1807 OPEN
C1808 10/6.3
C1801 10/10
Q1801
RPM-22PB
WBIR_DET
IR_AD
TO SYSCON, REG (Page 4-5,26)
IR_5V
REG_5V
A_REG_3V
GND
TALLY
IR_RMC
IC1801
PIC-26043S
OUT
GND
Vcc
1 2 3
R1802 180
R1804 OPEN
R1803 47
D1801
TLSU1002/LM/-X
C1802 OPEN
Q1802
DTC143XE

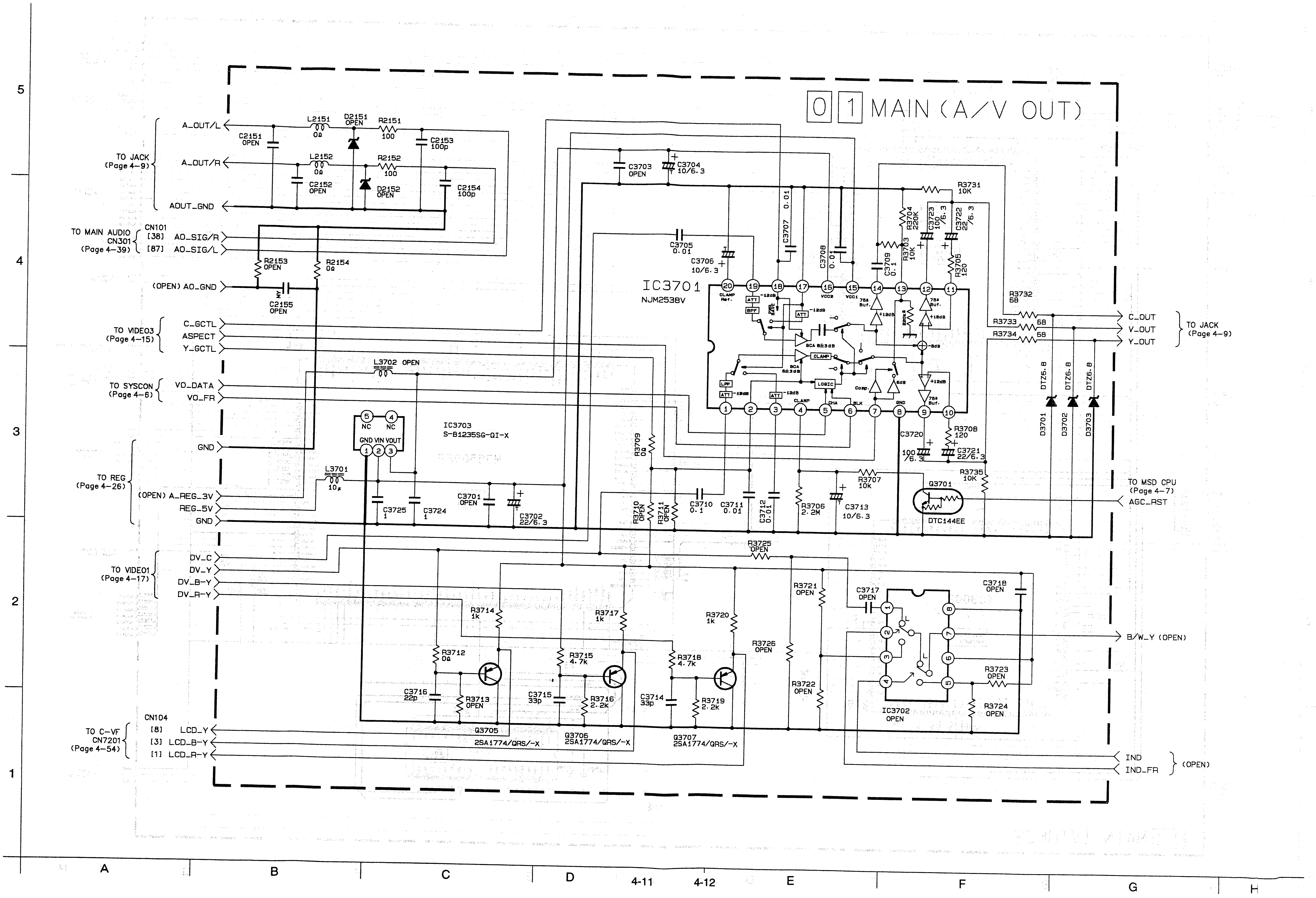
5
4
3
2
1

A B C D E F G H

4.6 VIDEO 2 SCHEMATIC DIAGRAM

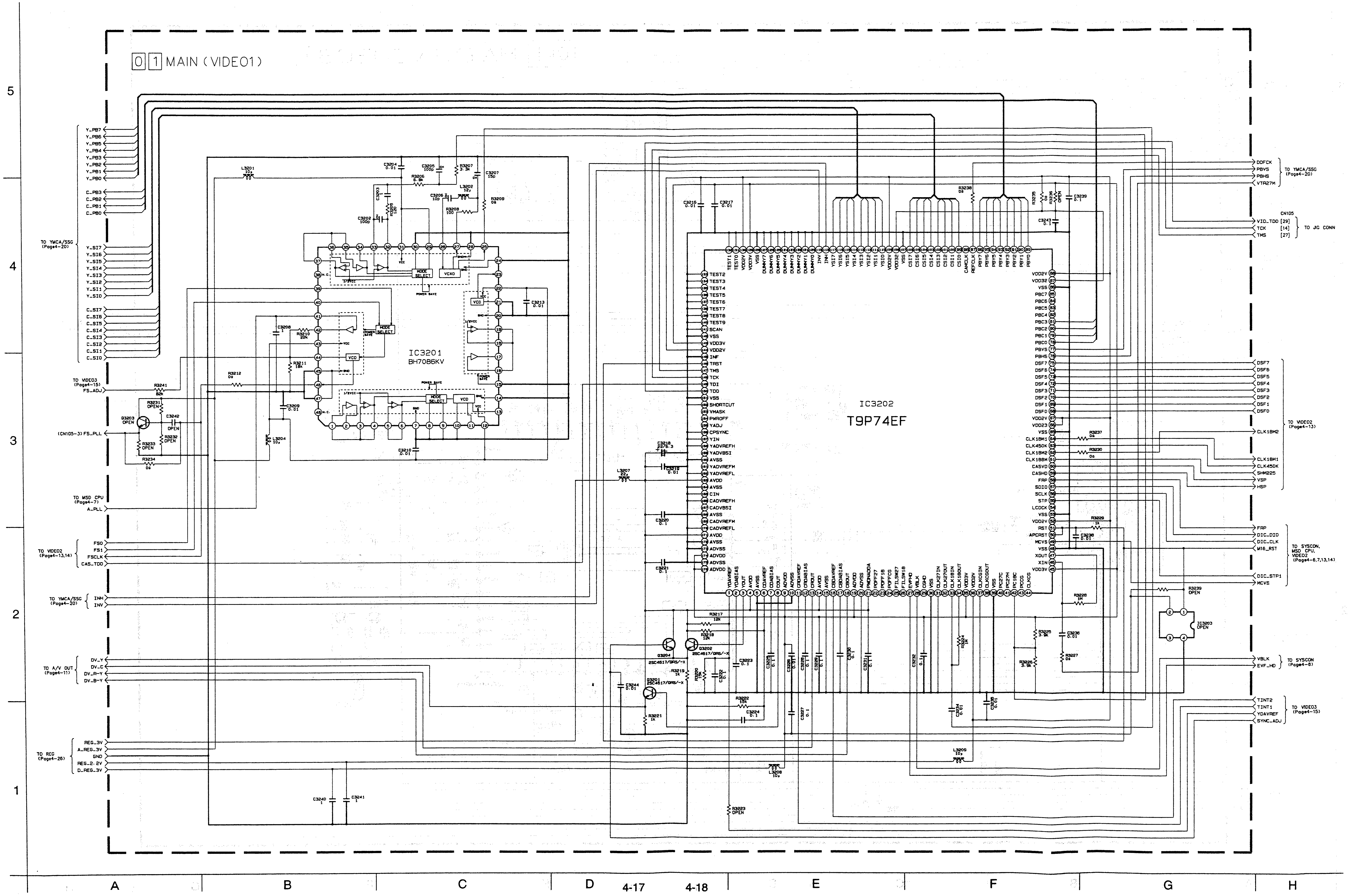

IC3001
MN67373
Compress Audio Shuffle
IC3002
MN47V07AF
Shuffle Memory
IC3003
M65500FP
ECC DCI ATF
IC3004
MN41V4260TT-A07
EDA Memory
01 MAIN (VIDEO2)
TO VIDEO1 (Page4-18)
FRP
CN101
TO AUDIO AD/DA CN301 (Page4-38)
AIDAT
DODAT
DOLRCK
DOMCK
DOBCK
FSCLK
SHM225
HSP
VSP
CLK45OK
TO VIDEO1 (Page4-17,18)
CLK18M2
TO MSD CPU (Page4-7)
SSP
TMS
TCK
DSF0
DSF1
DSF2
DSF3
DSF4
DSF5
DSF6
DSF7
CLK18M1
CAS_TDO
TO VIDEO1, J/C CONN (Page4-17,18)
TO YMCA/SSC (Page4-20)
CAM_TDO
PWMO
DIC_STP2
RO
BLM
TSR
SPA
TO MSD CPU, J/C CONN (Page4-7)
DIC_CLK
DIC_DIO
M16_RST
TO MSD CPU,VIDEO1 (Page4-7,18)
DRUM_PG
DRUM_FG
ALE
DT15
ADDT14
ADDT13
ADDT12
ADDT11
ADDT10
ADDT09
ADDT08
ADDT07
ADDT06
ADDT05
ADDT04
ADDT03
ADDT02
ADDT01
ADDT00
TO MSD CPU (Page4-7)
FS0
FS1
TO VIDEO1 (Page4-17)
HID
TO MSD CPU,PRE/REC,J/C CONN (Page4-7,42)
HID_3
REC_I
HSE
REC_CTL
TO PRE/REC CN301 (Page4-42)
VIT_ON
REF_CLK
CK_PHASE
VCO_CTL
VI_ADST
REC_CLK
PB_CLK
PB_DATA
ATFI
TO VIDEO3 (Page4-15)
PB_H
TO VIDEO3,PRE/REC (Page4-15,42)
ADDAT6
ADDAT5
ADDAT4
ADDAT3
ADDAT2
ADDAT1
ADDAT0
TO VIDEO3 (Page4-15)
GND
D_REG_3V
REG_2.2V
TO REC (Page4-26)
C3001
C3002
R3002 1M
R3003
X3001
C3003 0.01
C3004 0.01
C3005 0.01
R3004 1k
C3041 OPEN
C3042 OPEN
C3006
C3007 0.01
C3008 0.01
C3009 10/6.3
C3010 0.01
L3001 10μ
R3005 1M
C3011 0.01
C3012 0.01
C3013 0.01
C3022 22/4
L3002 10μ
C3015 0.01
C3016 0.1
C3019 0.01
C3017 0.01
C3021
R3006
R3010
R3011 220
R3012
R3007 220
R3008
R3009
R3015
C3030 0.1
R3016 1k
R3017 6.8K
R3013
R3014
R3018 1.5K
R3019 220K
R3022 120K
C3023 0.01
C3024 0.01
C3025 0.1
C3026 0.01
C3027 0.1
C3028 0.1
C3029 0.1
C3031 0.01
C3032 10/6.3
C3033 0.01
L3007 10μ
L3005 10μ
L3006 10μ
C3034 100/6.3
C3035 0.1
ADDAT[0-6]
[ADDRES]
[DATA]
BD0
BD1
BD2
BD3
SMP
1
2
3
4
5
A
B
C
D
E
F
G
H

4.5 A/V OUT SCHEMATIC DIAGRAM



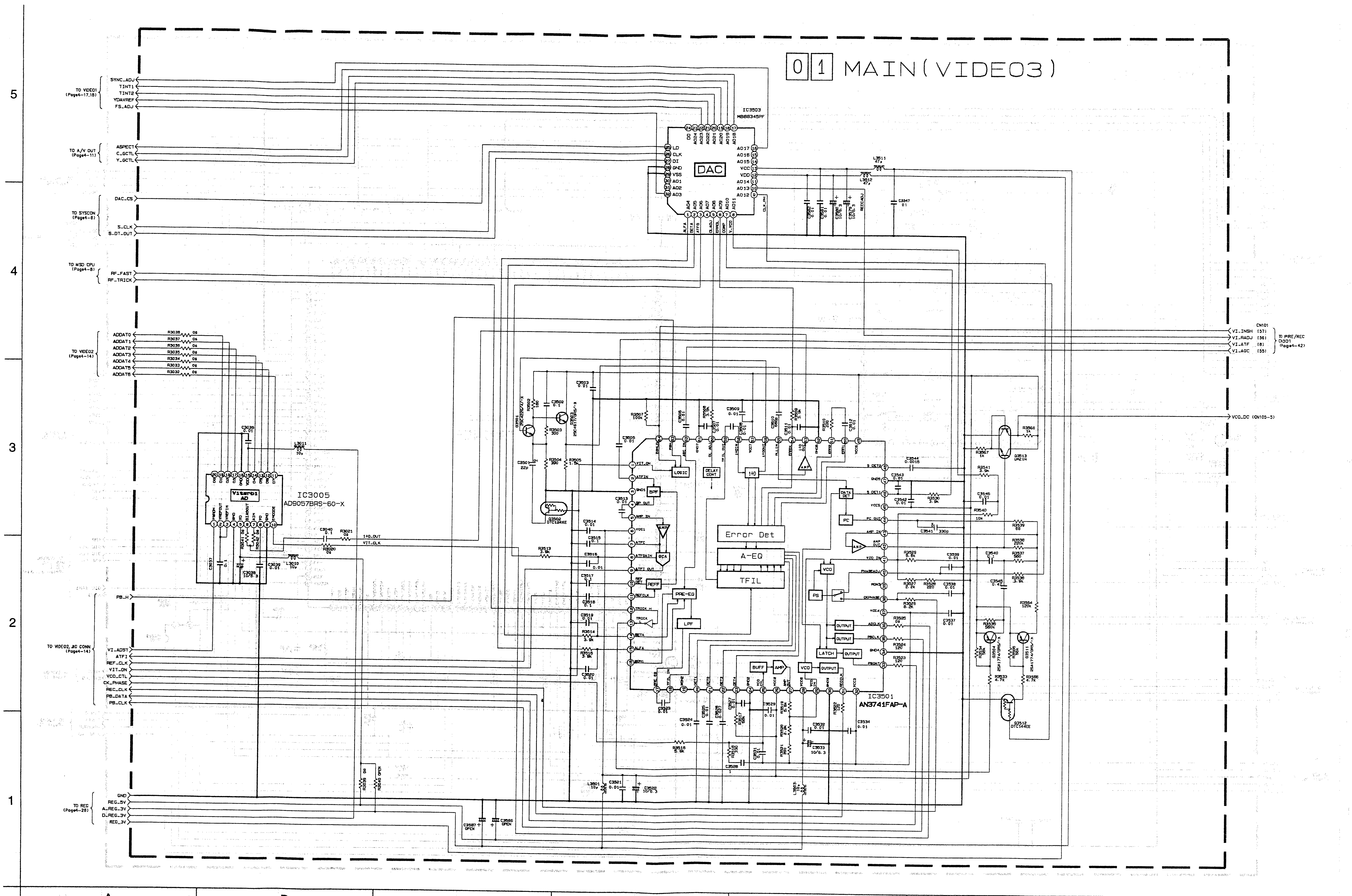
0 1 MAIN (A/V OUT)
TO JACK (Page 4-9)
A_OUT/L
A_OUT/R
AOUT_GND
TO MAIN AUDIO CN301 (Page 4-39)
CN101
[38] AO_SIG/R
[87] AO_SIG/L
(OPEN) AO_GND
TO VIDEO3 (Page 4-15)
C_GCTL
ASPECT
Y_GCTL
TO SYSCON (Page 4-6)
VO_DATA
VO_FR
GND
TO REG (Page 4-26)
(OPEN) A_REG_3V
REG_5V
GND
TO VIDEO1 (Page 4-17)
DV_C
DV_Y
DV_B-Y
DV_R-Y
TO C-VF CN7201 (Page 4-54)
CN104
[8] LCD_Y
[3] LCD_B-Y
[1] LCD_R-Y
L2151 0Ω
D2151 OPEN
R2151 100
C2151 OPEN
C2153 100p
L2152 0Ω
R2152 100
C2152 OPEN
D2152 OPEN
C2154 100p
R2153 OPEN
R2154 0Ω
C2155 OPEN
L3702 OPEN
IC3703 S-81235SG-QI-X
NC NC
GND VIN VOUT
L3701 10μ
C3725 1
C3724 1
C3701 OPEN
C3702 22/6.3
C3703 OPEN
C3704 10/6.3
C3705 0.01
C3706 10/6.3
C3707 0.01
C3708 0.01
C3709 0.1
R3703 10K
R3704 220K
C3723 100/6.3
C3722 22/6.3
R3705 120
R3731 10K
IC3701 NJM2538V
CLAMP Ref.
VCC2
VCC1
75Ω Buf.
ATT -12dB
BPF
ATT -12dB
SCA 0±3dB
CLAMP
LOGIC
LPF
ATT -12dB
Comp.
6dB
+12dB
+18dB
-6dB
CHA
BLK
GND
R3732 68
R3733 68
R3734 68
C_OUT
V_OUT
Y_OUT
TO JACK (Page 4-9)
DTZ6.8
D3701
D3702
D3703
R3709 0Ω
C3720 100/6.3
R3708 120
C3721 22/6.3
R3735 10K
R3707 10K
Q3701 DTC144EE
TO MSD CPU (Page 4-7)
AGC_RST
R3710 OPEN
R3711 OPEN
C3710 0.1
C3711 0.01
C3712 0.01
R3706 2.2M
C3713 10/6.3
R3725 OPEN
R3714 1k
R3712 0Ω
C3716 22p
R3713 OPEN
Q3705 2SA1774/QRS/-X
R3717 1k
R3715 4.7k
C3715 33p
R3716 2.2k
Q3706 2SA1774/QRS/-X
R3720 1k
R3718 4.7k
C3714 33p
R3719 2.2k
Q3707 2SA1774/QRS/-X
R3721 OPEN
R3726 OPEN
R3722 OPEN
C3717 OPEN
C3718 OPEN
R3723 OPEN
R3724 OPEN
IC3702 OPEN
B/W_Y (OPEN)
IND
IND_FR
(OPEN)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.8 VIDEO 1 SCHEMATIC DIAGRAM

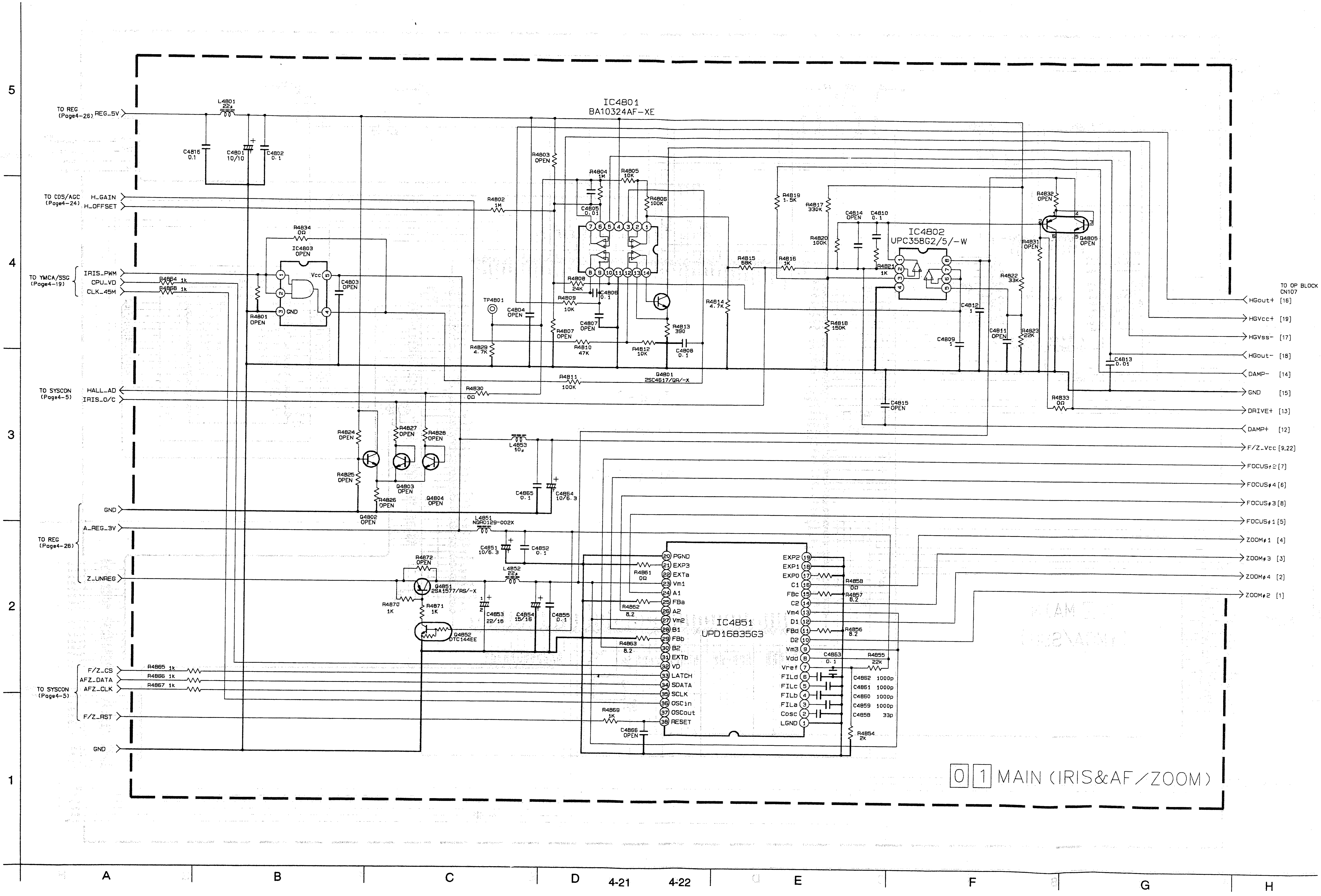


01 MAIN (VIDEO1)
IC3201
BH7086KV
IC3202
T9P74EF
Y_PB7
Y_PB6
Y_PB5
Y_PB4
Y_PB3
Y_PB2
Y_PB1
Y_PB0
C_PB3
C_PB2
C_PB1
C_PB0
TO YMCA/SSG (Page4-20)
Y_SI7
Y_SI6
Y_SI5
Y_SI4
Y_SI3
Y_SI2
Y_SI1
Y_SI0
C_SI7
C_SI6
C_SI5
C_SI4
C_SI3
C_SI2
C_SI1
C_SI0
TO VIDEO3 (Page4-15)
FS_ADJ
(CN105-3) FS_PLL
TO MSD CPU (Page4-7)
A_PLL
TO VIDEO2 (Page4-13,14)
FS0
FS1
FSCLK
CAS_TDO
TO YMCA/SSG (Page4-20)
INH
INV
TO A/V OUT (Page4-11)
DV_Y
DV_C
DV_R-Y
DV_B-Y
TO REG (Page4-26)
REG_3V
A_REG_3V
GND
REG_2.2V
D_REG_3V
DOFCK
PBVS
PBHS
VTR27M
TO YMCA/SSG (Page4-20)
CN105
VID_TDO [29]
TCK [14]
TMS [27]
TO JIG CONN
DSF7
DSF6
DSF5
DSF4
DSF3
DSF2
DSF1
DSF0
TO VIDEO2 (Page4-13)
CLK18M2
CLK18M1
CLK450K
SHM225
VSP
HSP
FRP
DIC_DIO
DIC_CLK
M16_RST
TO SYSCON, MSD CPU, VIDEO2 (Page4-6,7,13,14)
DIC_STP1
MCVS
VBLK
EVF_HD
TO SYSCON (Page4-8)
TINT2
TINT1
YDAVREF
SYNC_ADJ
TO VIDEO3 (Page4-15)
IC3203 OPEN
Q3201 2SC4617/QRS/-X
Q3202 2SC4617/QRS/-X
Q3203 OPEN
Q3204 2SC4617/QRS/-X
MODE SELECT
VCXO
VCO
POWER SAVE
A
B
C
D
E
F
G
H
1
2
3
4
5

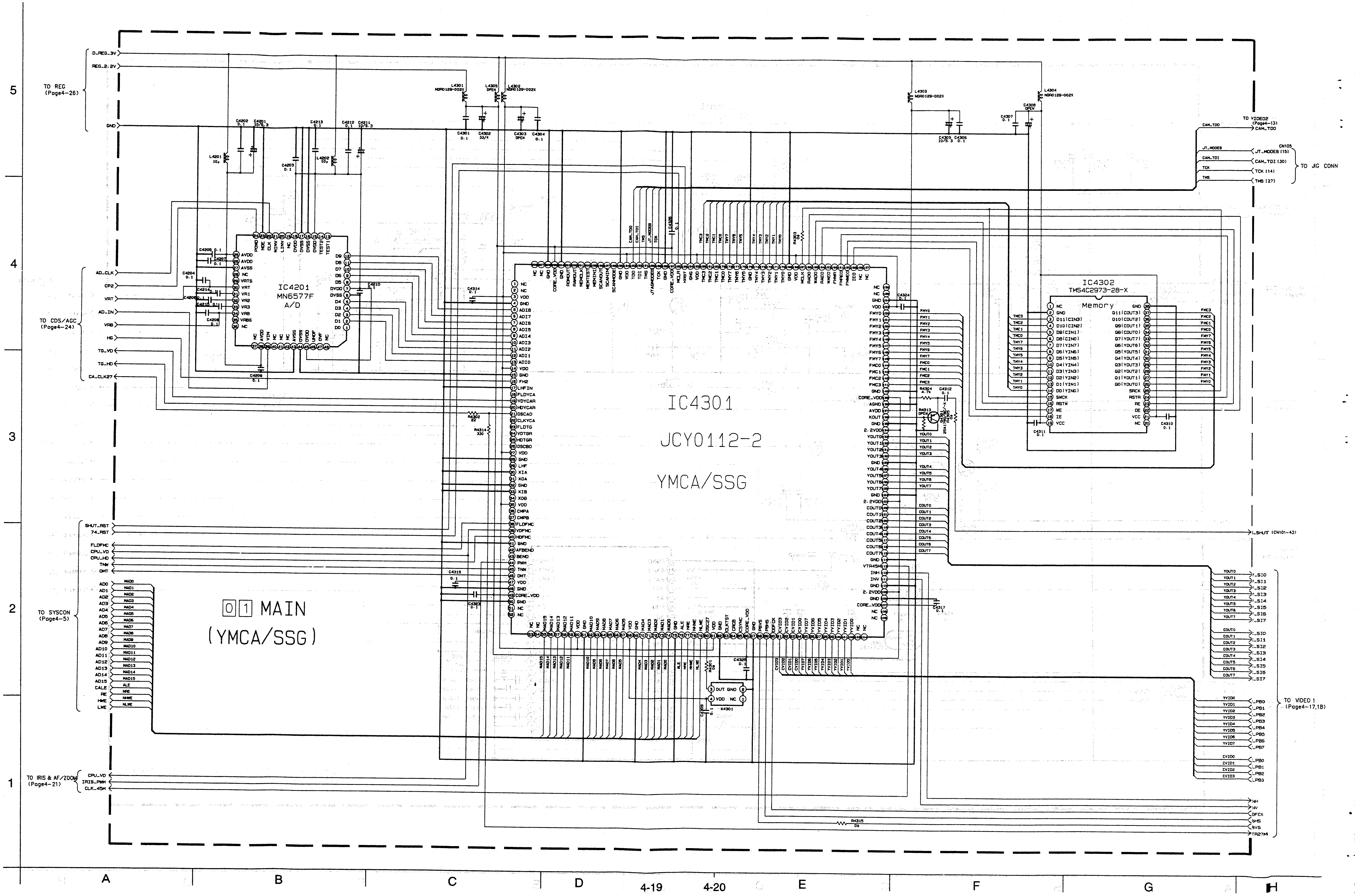
4.7 VIDEO 3 SCHEMATIC DIAGRAM


01 MAIN(VIDEO3)
TO VIDEO1 (Page4-17,18)
SYNC_ADJ
TINT1
TINT2
YDAVREF
FS_ADJ
TO A/V OUT (Page4-11)
ASPECT
C_GCTL
Y_GCTL
TO SYSCON (Page4-8)
DAC_CS
S_CLK
S_DT_OUT
TO MSD CPU (Page4-8)
RF_FAST
RF_TRICK
TO VIDEO2 (Page4-14)
ADDAT0
ADDAT1
ADDAT2
ADDAT3
ADDAT4
ADDAT5
ADDAT6
R3038 0Ω
R3037 0Ω
R3036 0Ω
R3035 0Ω
R3034 0Ω
R3033 0Ω
R3032 0Ω
TO VIDEO2, JIG CONN (Page4-14)
PB_H
VI_ADST
ATFI
REF_CLK
VIT_ON
VCO_CTL
CK_PHASE
REC_CLK
PB_DATA
PB_CLK
TO REG (Page4-28)
GND
REG_5V
A_REG_3V
D_REG_3V
REG_3V
IC3503 MB88345PF
DAC
LD
CLK
DI
GND
VSS
AO1
AO2
AO3
AO17
AO16
AO15
VCC
VDD
AO14
AO13
AO12
L3511 47μ
L3512 47μ
C3547 0.1
IC3005 AD9057BRS-60-X
Viterbi AD
C3036 0.01
L3011 10μ
L3010 10μ
C3037 0.1
C3038 10/6.3
C3039 0.01
C3040 0.1
R3020 0Ω
R3021 0Ω
R3041
R3042
1+0_OUT
VIT_CLK
R3039 0Ω
R3040 OPEN
C3587 OPEN
C3586 OPEN
IC3501 AN3741FAP-A
Error Det
A-EQ
TFIL
LOGIC
DELAY CONT
1H
AMP
BPF
GCA
REFF
PRE-EQ
LPF
VCO
PS
PC
DATA DET
OUTPUT
LATCH
BUFF
Q3501
Q3502 DTC124XE
Q3503
Q3504 2SA1774/QRS/-X
Q3511 2SA1774/QRS/-X
Q3512 DTC144EE
Q3513 UMZ1N
L3501 10μ
C3521 0.01
C3522 10/6.3
L3503 10μ
CN101
VI_INSH (57)
VI_RADJ (56)
VI_ATF (8)
VI_AGC (55)
TO PRE/REC CN301 (Page4-42)
VCO_DC (CN105-5)
1
2
3
4
5
A
B
C
D
E
F
G
H

4.10 IRIS & AF/ZOOM SCHEMATIC DIAGRAM

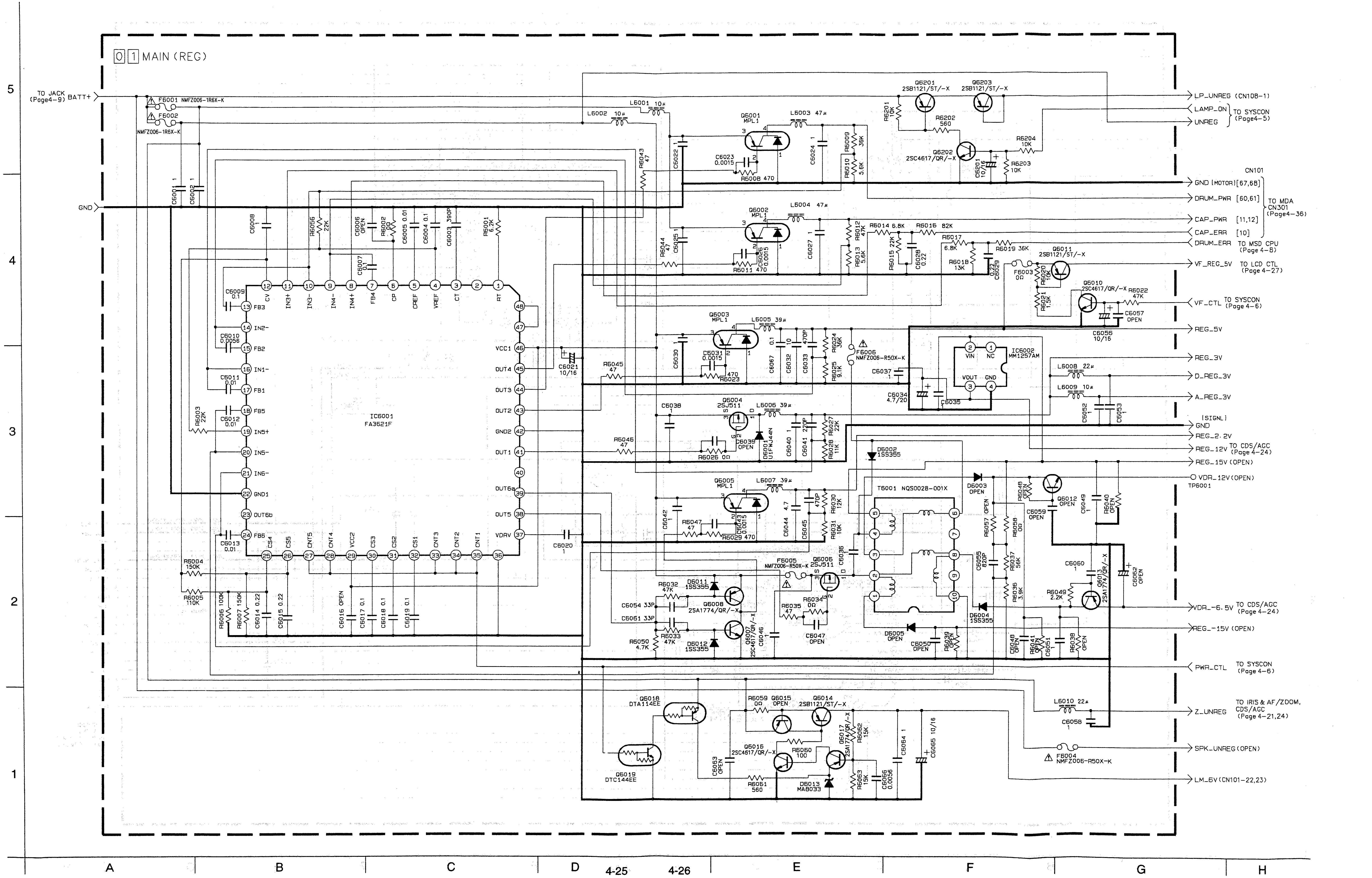

5
4
3
2
1
A
B
C
D
E
F
G
H
TO REG (Page4-26) REG_5V
L4801 22μ
C4816 0.1
C4801 10/10
C4802 0.1
IC4801
BA10324AF-XE
TO CDS/AGC (Page4-24) H_GAIN
H_OFFSET
R4802 1M
R4803 OPEN
R4804 1M
R4805 10K
R4806 100K
C4805 0.01
R4808 24K
C4806 0.1
R4809 10K
R4807 OPEN
C4807 OPEN
R4810 47K
R4812 10K
R4813 390
C4808 0.1
Q4801 2SC4617/QR/-X
R4811 100K
TP4801
C4804 OPEN
R4829 4.7K
R4834 0Ω
IC4803 OPEN
C4803 OPEN
R4801 OPEN
Vcc
GND
TO YMCA/SSG (Page4-19)
IRIS_PWM
CPU_VD
CLK_45M
R4864 1k
R4868 1k
TO SYSCON (Page4-5)
HALL_AD
IRIS_O/C
R4830 0Ω
R4824 OPEN
R4825 OPEN
R4827 OPEN
R4828 OPEN
R4826 OPEN
Q4802 OPEN
Q4803 OPEN
Q4804 OPEN
L4853 10μ
C4865 0.1
C4864 10/6.3
R4814 4.7K
R4815 68K
R4816 1K
R4819 1.5K
R4817 330K
R4820 100K
C4814 OPEN
C4810 0.1
IC4802
UPC358G2/5/-W
R4821 1K
R4818 150K
C4812 1
C4809 1
C4811 OPEN
C4815 OPEN
R4822 33K
R4823 22K
R4831 OPEN
R4832 OPEN
Q4805 OPEN
C4813 0.01
R4833 0Ω
TO OP BLOCK CN107
HGout+ [16]
HGVcc+ [19]
HGVss- [17]
HGout- [18]
DAMP- [14]
GND [15]
DRIVE+ [13]
DAMP+ [12]
F/Z_Vcc [9,22]
FOCUSφ2 [7]
FOCUSφ4 [6]
FOCUSφ3 [8]
FOCUSφ1 [5]
ZOOMφ1 [4]
ZOOMφ3 [3]
ZOOMφ4 [2]
ZOOMφ2 [1]
TO REG (Page4-26)
GND
A_REG_3V
Z_UNREG
L4851 NQR0129-002X
C4851 10/6.3
C4852 0.1
L4852 22μ
R4872 OPEN
Q4851 2SA1577/RS/-X
R4870 1K
R4871 1K
C4853 22/16
C4854 15/16
C4855 0.1
Q4852 DTC144EE
TO SYSCON (Page4-5)
F/Z_CS
AFZ_DATA
AFZ_CLK
F/Z_RST
GND
R4865 1k
R4866 1k
R4867 1k
R4861 0Ω
R4862 8.2
R4863 8.2
R4869 1K
C4866 OPEN
IC4851
UPD16835G3
PGND
EXP3
EXTa
Vm1
A1
FBa
A2
Vm2
B1
FBb
B2
EXTb
VD
LATCH
SDATA
SCLK
OSCin
OSCout
RESET
EXP2
EXP1
EXP0
C1
FBc
C2
Vm4
D1
FBd
D2
Vm3
Vdd
Vref
FILd
FILc
FILb
FILa
Cosc
LGND
R4858 0Ω
R4857 8.2
R4856 8.2
C4863 0.1
R4855 22k
C4862 1000p
C4861 1000p
C4860 1000p
C4859 1000p
C4858 33p
R4854 2K
01 MAIN (IRIS&AF/ZOOM)

4.9 YMCA/SSG SCHEMATIC DIAGRAM

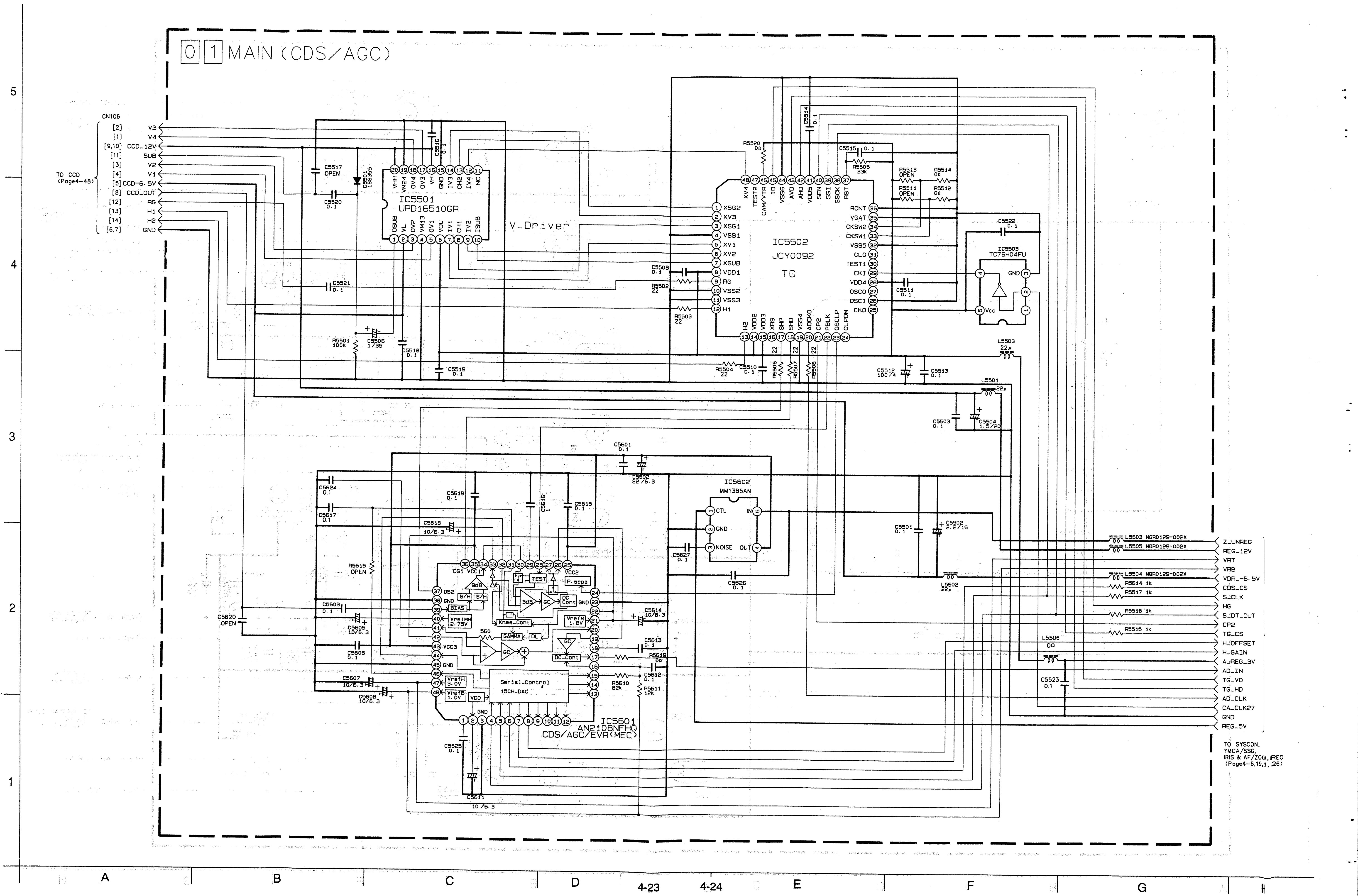


5
4
3
2
1
A
B
C
D
E
F
G
H
TO REG (Page4-26)
D_REG_3V
REG_2.2V
GND
TO CDS/AGC (Page4-24)
AD_CLK
CP2
VRT
AD_IN
VRB
HG
TG_VD
TG_HD
CA_CLK27
SHUT_RST
74_RST
FLDFMC
CPU_VD
CPU_HD
TNW
DMT
TO SYSCON (Page4-5)
AD0
AD1
AD2
AD3
AD4
AD5
AD6
AD7
AD8
AD9
AD10
AD11
AD12
AD13
AD14
AD15
CALE
RE
HWE
LWE
TO IRIS & AF/ZOOM (Page4-21)
CPU_VD
IRIS_PWM
CLK_45M
IC4201
MN6577F
A/D
IC4301
JCY0112-2
YMCA/SSG
IC4302
TMS4C2973-28-X
Memory
X4301
L4201
L4202
L4301
L4302
L4303
L4304
L4305
C4201
C4202
C4203
C4204
C4205
C4206
C4207
C4208
C4209
C4210
C4211
C4213
C4214
C4301
C4302
C4303
C4304
C4305
C4306
C4307
C4308
C4310
C4311
C4312
C4314
C4315
C4316
C4317
C4324
C4325
R4302
R4304
R4313
R4314
R4315
01 MAIN
(YMCA/SSG)
TO VIDEO2 (Page4-13)
CAM_TDO
CN105
JT_MODEB (15)
CAM_TDI (30)
TCK (14)
TMS (27)
TO JIG CONN
I_SHUT (CN101-43)
I_SI0
I_SI1
I_SI2
I_SI3
I_SI4
I_SI5
I_SI6
I_SI7
I_PB0
I_PB1
I_PB2
I_PB3
I_PB4
I_PB5
I_PB6
I_PB7
TO VIDEO 1 (Page4-17,18)
NH
NV
DFCK
SHS
SVS
TR27M

4.12 REGULATOR SCHEMATIC DIAGRAM


01 MAIN (REG)
TO JACK (Page4-9) BATT+
GND
F6001 NMFZ006-1R6X-K
F6002 NMFZ006-1R6X-K
L6001 10μ
L6002 10μ
Q6001 MPL1
L6003 47μ
Q6201 2SB1121/ST/-X
Q6203 2SB1121/ST/-X
Q6202 2SC4617/QR/-X
R6201 10K
R6202 560
R6203 10K
R6204 10K
C6201 10/16
LP_UNREG (CN108-1)
LAMP_ON
UNREG
TO SYSCON (Page4-5)
CN101
GND [MOTOR] [67,68]
DRUM_PWR [60,61]
CAP_PWR [11,12]
CAP_ERR [10]
TO MDA CN301 (Page4-36)
DRUM_ERR TO MSD CPU (Page 4-6)
VF_REG_5V TO LCD CTL (Page 4-27)
VF_CTL TO SYSCON (Page 4-6)
REG_5V
REG_3V
D_REG_3V
A_REG_3V
[SIGNL] GND
REG_2.2V
REG_12V TO CDS/AGC (Page 4-24)
REG_15V (OPEN)
VDR_12V (OPEN)
TP6001
VDR_-6.5V TO CDS/AGC (Page 4-24)
REG_-15V (OPEN)
PWR_CTL TO SYSCON (Page 4-6)
Z_UNREG TO IRIS & AF/ZOOM, CDS/AGC (Page 4-21,24)
SPK_UNREG (OPEN)
LM_6V (CN101-22,23)
Q6002 MPL1
L6004 47μ
Q6003 MPL1
L6005 39μ
Q6004 2SJ511
L6006 39μ
Q6005 MPL1
L6007 39μ
Q6006 2SJ511
Q6007 2SC4617/QR/-X
Q6008 2SA1774/QR/-X
Q6010 2SC4617/QR/-X
Q6011 2SB1121/ST/-X
Q6012 OPEN
Q6013 2SA1774/QR/-X
Q6014 2SB1121/ST/-X
Q6015 OPEN
Q6016 2SC4617/QR/-X
Q6017 2SA1774/QR/-X
Q6018 DTA114EE
Q6019 DTC144EE
IC6001 FA3621F
IC6002 MM1257AM
T6001 NQS0028-001X
D6001 U1FWJ44N
D6002 1SS355
D6003 OPEN
D6004 1SS355
D6005 OPEN
D6011 1SS355
D6012 1SS355
D6013 MA8033
F6003 0Ω
F6004 NMFZ006-R50X-K
F6005 NMFZ006-R50X-K
F6006 NMFZ006-R50X-K
L6008 22μ
L6009 10μ
L6010 22μ
CV IN3+ IN3- IN4- IN4+ FB4 CP CREF VREF CT RT
FB3 IN2- FB2 IN1- FB1 FB5 IN5+ IN5- IN6- GND1 OUT6b FB6
CS4 CS5 CNT5 CNT4 VCC2 CS3 CS2 CS1 CNT3 CNT2 CNT1
VCC1 OUT4 OUT3 OUT2 GND2 OUT1 OUT6a OUT5 VDRV
VIN NC VOUT GND
A B C D E F G H
1 2 3 4 5

4.11 CDS/AGC SCHEMATIC DIAGRAM


01 MAIN (CDS/AGC)
CN106
[2] V3
[1] V4
[9,10] CCD_12V
[11] SUB
[3] V2
[4] V1
[5] CCD-6.5V
[8] CCD_OUT
[12] RG
[13] H1
[14] H2
[6,7] GND
TO CCD (Page4-48)
IC5501
UPD16510GR
V-Driver
VHH VM24 OV4 OV3 VH GND IV3 CH2 IV4 NC
OSUB VL OV2 VM13 OV1 VDC IV1 CH1 IV2 ISUB
C5517 OPEN
D5501 1SS355
C5520 0.1
C5516 0.1
C5521 0.1
R5501 100k
C5506 1/35
C5518 0.1
C5519 0.1
IC5502
JCY0092
TG
XSG2 XV3 XSG1 VSS1 XV1 XV2 XSUB VDD1 RG VSS2 VSS3 H1
XV4 TEST2 CAM/VTR ID VSS6 AVD AHD VDD5 SEN SSI SSCK RST
RCNT VGAT CKSW2 CKSW1 VSS5 CLO TEST1 CKI VDD4 OSCO OSCI CKO
H2 VDD2 VDD3 XRS SHP SHD VSS4 ADCKO CP2 PBLK OBCLP CLPDM
R5520 0Ω
C5514 0.1
C5515 0.1
R5505 33k
R5513 OPEN
R5514 0Ω
R5511 OPEN
R5512 0Ω
C5522 0.1
IC5503
TC7SH04FU
GND Vcc
C5511 0.1
C5508 0.1
R5502 22
R5503 22
R5504 22
C5510 0.1
R5506 22
R5507 22
R5508 22
C5512 100/4
C5513 0.1
L5503 22μ
L5501 22μ
C5503 0.1
C5504 1.5/20
C5601 0.1
C5602 22/6.3
IC5602
MM1385AN
CTL GND NOISE IN OUT
C5627 0.1
C5626 0.1
C5501 0.1
C5502 2.2/16
L5502 22μ
C5624 0.1
C5617 0.1
C5619 0.1
C5616 1
C5615 0.1
C5618 10/6.3
R5615 OPEN
C5603 0.1
C5620 OPEN
C5605 10/6.3
C5606 0.1
C5607 10/6.3
C5608 10/6.3
C5614 10/6.3
C5613 0.1
R5619 0Ω
C5612 0.1
R5610 82k
R5611 12k
C5625 0.1
C5611 10/6.3
DS1 VCC1 VCC2 DS2 GND BIAS VCC3 GND
9dB S/H S/H TEST P.sepa 3dB GC DC Cont GND
VrefMH 2.75V Knee_Cont VrefM 1.8V 560 GAMMA DL GC DC_Cont
VrefH 3.0V VrefB 1.0V VDD GND
Serial_Control 15CH_DAC
IC5601
AN2108NFHQ
CDS/AGC/EVR(MEC)
L5603 NQR0129-002X
L5505 NQR0129-002X
L5504 NQR0129-002X
R5614 1k
R5517 1k
R5516 1k
R5515 1k
L5506 0Ω
C5523 0.1
Z_UNREG
REG_12V
VRT
VRB
VDA_-6.5V
CDS_CS
S_CLK
HG
S_DT_OUT
CP2
TG_CS
H_OFFSET
H_GAIN
A_REG_3V
AD_IN
TG_VD
TG_HD
AD_CLK
CA_CLK27
GND
REG_5V
TO SYSCON, YMCA/SSG, IRIS & AF/ZOOM, REG (Page4-6,19,21,26)
5
4
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2
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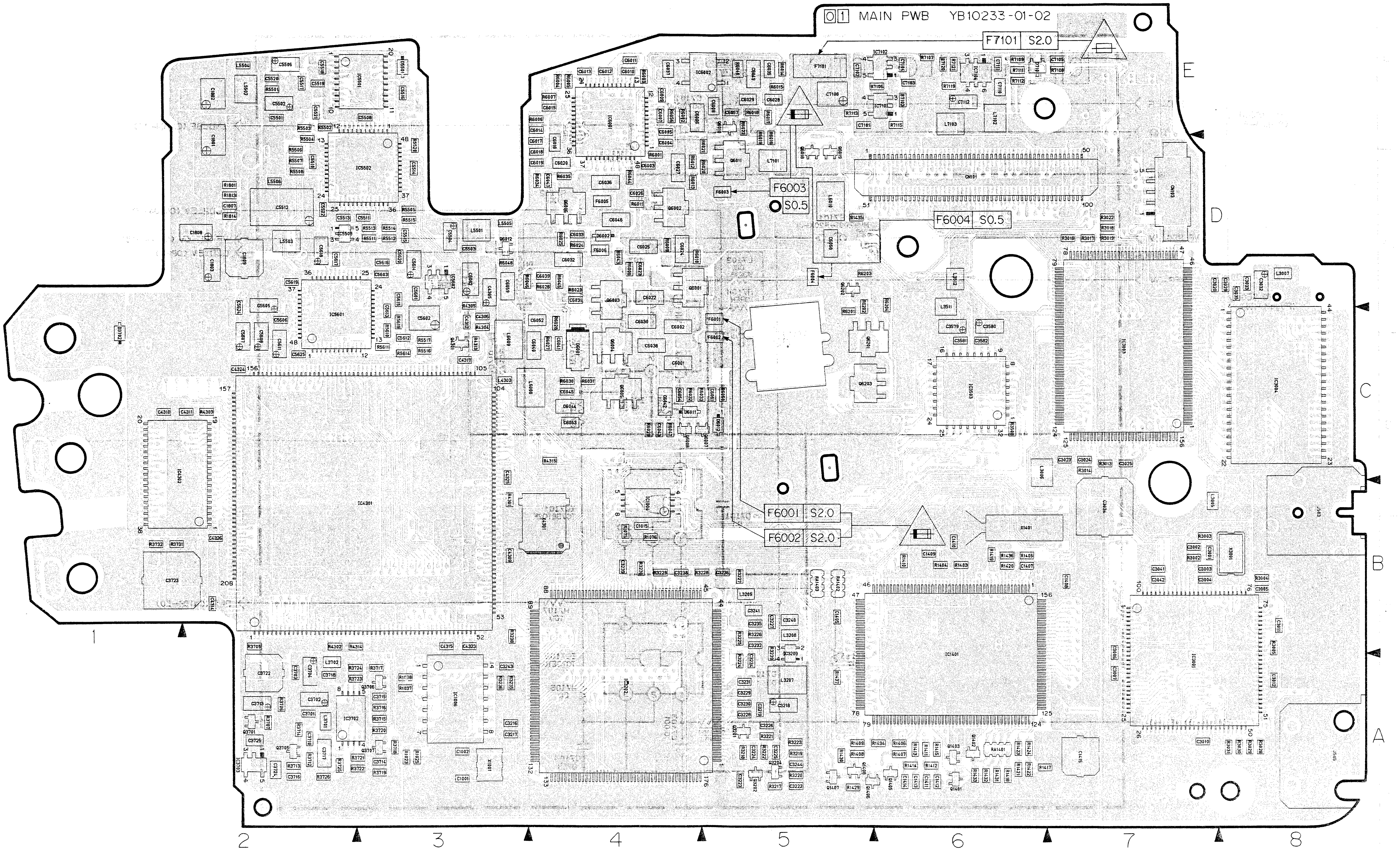
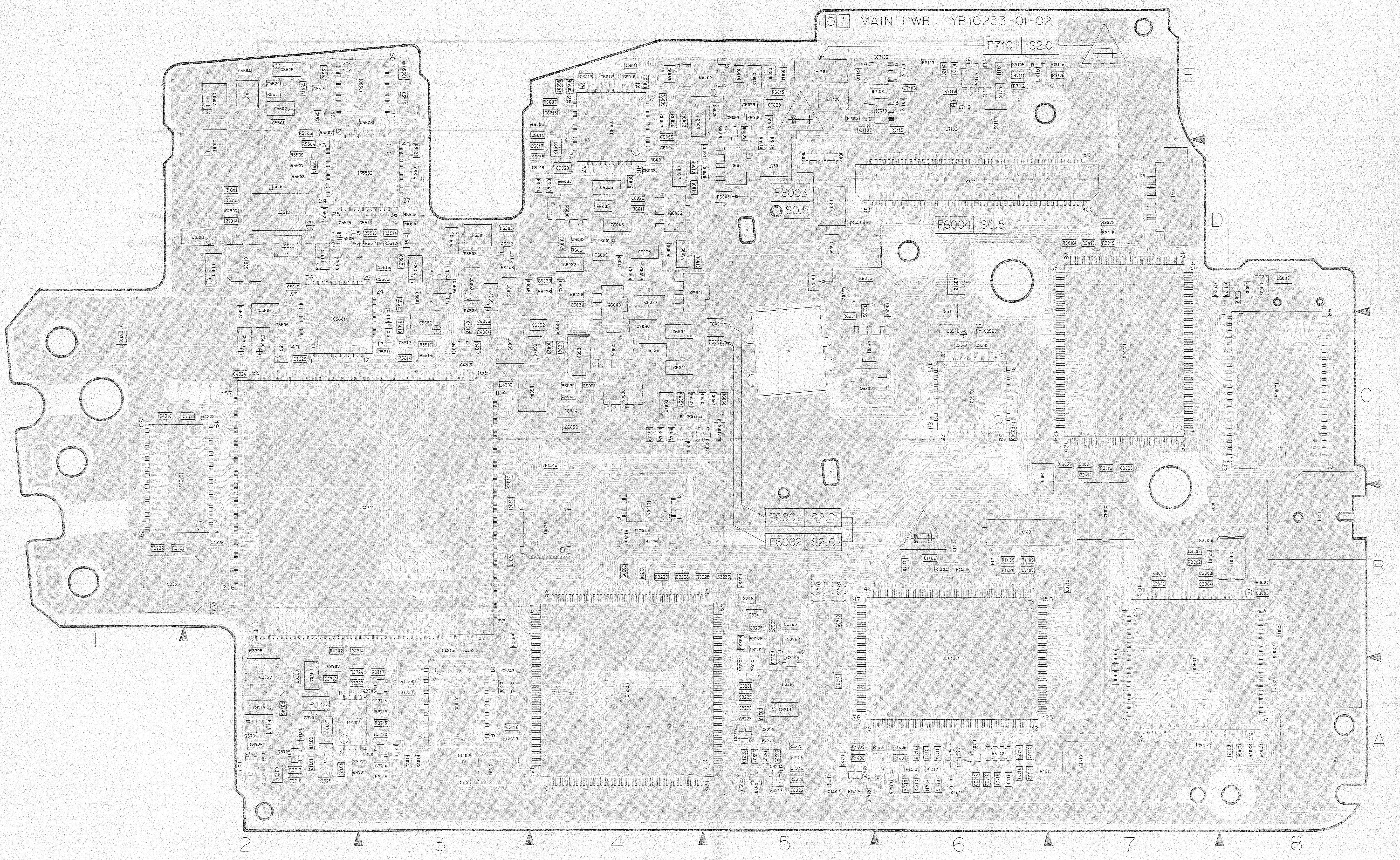
A
B
C
D
E
F
G
H

4.14 MAIN CIRCUIT BOARD

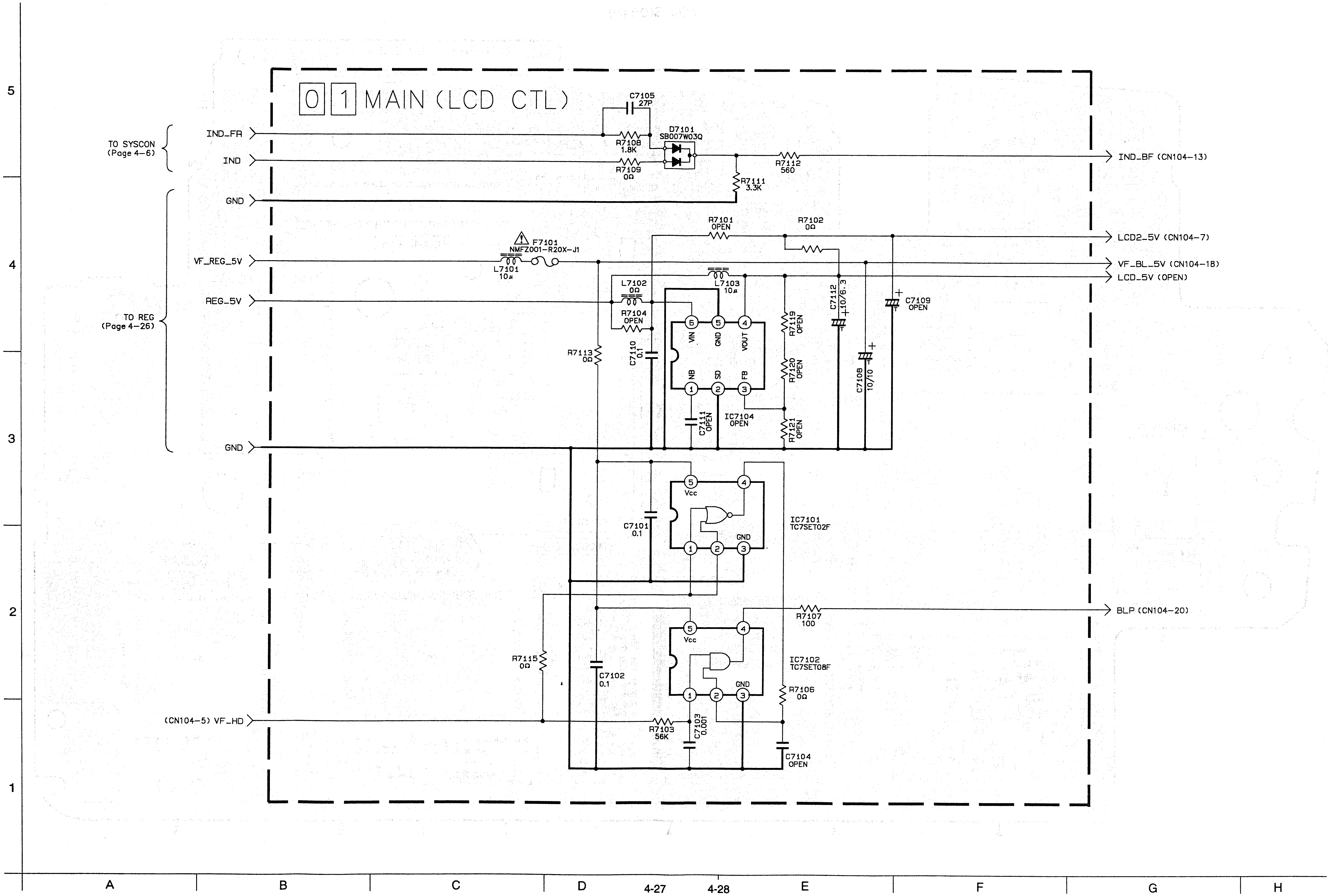
FOIL SIDE (B)


01 MAIN PWB YB10233-01-02
F7101 S2.0
F6003 S0.5
F6004 S0.5
F6001 S2.0
F6002 S2.0
IC4301
IC1401
IC3001
IC3003
IC3004
IC5502
IC5601
IC6001
IC4302
IC3202
IC3702
IC1006
CN101
CN103
X1401
E
D
C
B
A
1
2
3
4
5
6
7
8

FOIL SIDE (B)


01 MAIN PWB YB10233-01-02
F7101 S2.0
F6003 S0.5
F6004 S0.5
F6001 S2.0
F6002 S2.0
E
D
C
B
A
1
2
3
4
5
6
7
8

4.13 LCD CTL SCHEMATIC DIAGRAM


0 1 MAIN (LCD CTL)
TO SYSCON (Page 4-6)
IND_FR
IND
GND
TO REG (Page 4-26)
VF_REG_5V
REG_5V
GND
(CN104-5) VF_HD
C7105 27P
R7108 1.8K
R7109 0Ω
D7101 SB007W03Q
R7112 560
R7111 3.3K
IND_BF (CN104-13)
R7101 OPEN
R7102 0Ω
LCD2_5V (CN104-7)
F7101 NMFZ001-R20X-J1
L7101 10μ
VF_BL_5V (CN104-18)
LCD_5V (OPEN)
L7102 0Ω
L7103 10μ
R7104 OPEN
C7112 10/6.3
C7109 OPEN
R7119 OPEN
R7120 OPEN
R7121 OPEN
C7108 10/10
R7113 0Ω
C7110 0.1
VIN
GND
VOUT
NB
SD
FB
C7111 OPEN
IC7104 OPEN
Vcc
GND
C7101 0.1
IC7101 TC7SET02F
R7107 100
BLP (CN104-20)
IC7102 TC7SET08F
R7115 0Ω
C7102 0.1
R7106 0Ω
R7103 56K
C7103 0.001
C7104 OPEN
1
2
3
4
5
A
B
C
D
E
F
G
H

COMPONENT PARTS LOCATION GUIDE (MAIN)

REF.No.	LOCATION		
CAPACITOR			
C1001	B	C	3A
C1002	B	C	3A
C1003	A	C	3B
C1004	A	C	3B
C1005	A	C	3B
C1006	A	C	3B
C1007	A	C	3B
C1008	A	C	4B
C1009	A	C	4B
C1010	A	C	4B
C1011	A	C	4B
C1012	A	C	3B
C1013	A	C	4B
C1014	A	C	4B
C1015	B	C	4B
C1016	A	C	4B
C1017	A	C	3B
C1018	A	C	2B
C1019	A	C	2B
C1020	A	C	2B
C1021	A	C	3A
C1022	A	C	3B
C1023	A	C	3C
C1024	A	C	4B
C1025	A	C	4B
C1026	A	C	4B
C1027	A	C	3B
C1028	A	C	3B
C1029	A	C	3B
C1030	A	C	5B
C1031	A	C	3B
C1032	A	C	3A
C1033	A	C	3B
C1034	A	C	3C
C1035	A	C	3B
C1036	A	C	3B
C1037	A	C	3B
C1038	A	C	8C
C1039	A	C	8C
C1401	A	C	6B
C1402	A	C	6A
C1403	A	C	6B
C1404	A	C	6A
C1405	B	C	5B
C1406	A	C	6B
C1407	B	C	6B
C1408	B	C	7B
C1409	B	C	6B
C1410	B	C	6B
C1411	B	C	6A
C1412	B	C	6A
C1413	B	C	6A
C1414	B	C	6A
C1415	B	C	7A
C1801	B	C	2D
C1802	B	C	2E
C1803	B	C	2D
C1804	A	C	2D
C1805	A	C	2D
C1806	A	C	2D
C1807	B	C	2D
C1808	B	C	2D
C1809	B	C	2D
C2151	A	C	1B
C2152	A	C	1B
C2153	A	C	1B
C2154	A	C	1B
C2155	A	C	2B
C3001	B	C	7B
C3002	B	C	7B
C3003	B	C	7B
C3004	B	C	7B
C3005	B	C	8B
C3006	B	C	7A
C3007	B	C	7A
C3008	A	C	8B
C3009	A	C	8B
C3010	B	C	7A
C3011	B	C	8B
C3012	B	C	8A
C3013	A	C	7A
C3015	A	C	7A
C3016	A	C	7A
C3017	A	C	7B
C3018	A	C	8B
C3019	A	C	7B
C3021	A	C	7A
C3022	A	C	7A
C3023	B	C	7C
C3024	B	C	7C
C3025	B	C	7C
C3026	A	C	7C
C3027	A	C	7C
C3028	B	C	7D
C3029	B	C	8D
C3030	A	C	7D
C3031	A	C	7D
C3032	B	C	8D
C3033	B	C	8D
C3034	B	C	7B
C3035	B	C	8D
C3036	A	C	7C
C3037	A	C	8C
C3038	A	C	7C
C3039	A	C	7C
C3040	A	C	7C
C3041	B	C	7B
C3042	B	C	7B
C3202	A	C	6A
C3203	A	C	6A
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C7108	B	C	5E
C7109	A	C	6D
C7110	B	C	6E
C7111	B	C	6E
C7112	B	C	6E
CONNECTOR			
CN101	B	C	6D
CN102	A	C	7E
CN103	B	C	7D
CN104	A	C	7D
CN105	A	C	3C
CN106	A	C	3D
CN107	A	C	2E
CN108	A	C	2A
CN109	A	C	5E
CN110	A	C	8C
CN111	A	C	3B
DIODE			
D501	A	C	7B
D502	A	C	8B
D1001	A	C	3B
D1002	A	C	4B
D1003	A	C	3B
D1801	A	C	2E
D2151	A	C	1B
D2152	A	C	1B
D3701	A	C	8A
D3702	B	C	1C
D3703	A	C	8A
D5501	B	C	3E
D6001	B	C	4C
D6002	B	C	4D
D6003	A	C	3D
D6004	A	C	3D
D6005	A	C	4E
D6011	B	C	4C
D6012	B	C	5C
D6013	A	C	5D
D7101	B	C	6E
IC			
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IC1002	A	C	3A
IC1003	A	C	3B
IC1004	B	C	4B
IC1005	A	C	5A
IC1006	B	C	3A
IC1007	A	C	3A
IC1008	A	C	3B
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IC1010	A	C	3B
IC1011	A	C	2B
IC1401	B	C	6A
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IC3003	B	C	7C
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IC3202	B	C	4A
IC3203	B	C	5A
IC3501	A	C	6C
IC3503	B	C	6C
IC3701	A	C	2A
IC3702	B	C	2A
IC3703	B	C	2A
IC4201	A	C	2B
IC4301	B	C	3B
IC4302	B	C	2C
IC4801	A	C	2C
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IC4803	A	C	3C
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IC5601	B	C	2C
IC5602	B	C	3D
IC6001	B	C	4E
IC6002	B	C	5E
IC7101	B	C	6E
IC7102	B	C	6E
IC7104	B	C	6E
COIL			
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L1003	A	C	3B
L1005	A	C	3A
L1401	A	C	7B
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L2152	A	C	1B
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L3002	A	C	7A
L3005	B	C	7B
L3006	B	C	6C
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L4302	A	C	2C
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L6010	B	C	5D
L7101	B	C	5D
L7102	B	C	6E
L7103	B	C	6E
TRANSISTOR			
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Q1003	A	C	5A
Q1004	A	C	5A
Q1005	A	C	4B
Q1006	A	C	4B
Q1007	A	C	2B
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Q1405	B	C	6A
Q1406	B	C	6A
Q1407	B	C	5A
Q1408	B	C	5A
Q1801	A	D	2D
Q1802	A	C	1E
Q3201	B	C	5A
Q3202	B	C	5A
Q3203	A	C	6B
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Q3501	A	C	6B
Q3502	A	C	6B
Q3503	A	C	6B
Q3504	A	C	7C
Q3511	A	C	7C
Q3512	A	C	7B
Q3513	A	C	7B
Q3701	B	C	2A
Q3705	B	C	2A

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Q3707	B	C	3A
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Q4801	A	C	2C
Q4802	A	C	3C
Q4803	A	C	3D
Q4804	A	C	3C
Q4805	A	C	1C
Q4851	A	C	1C
Q4852	A	C	1D
Q6001	B	C	4D
Q6002	B	C	4D
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Q6005	B	C	4C
Q6006	B	C	4D
Q6007	B	C	5C
Q6008	B	C	4C
Q6010	B	C	5E
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Q6012	B	C	3D
Q6013	A	C	3D
Q6014	A	C	5D
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Q6016	A	C	5E
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Q6019	B	C	5D
Q6201	B	C	5C
Q6202	B	C	5D
Q6203	B	C	5C
RESISTOR			
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R503	A	C	8B
R504	A	C	8B
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R1002	A	C	4A
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R1013	A	C	5B
R1014	A	C	4B
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R1016	A	C	5A
R1017	A	C	5A
R1018	A	C	4B
R1019	A	C	4B
R1020	A	C	4B
R1021	A	C	4B
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R1024	A	C	4A
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R1080	A	C	2B
R1081	A	C	4A
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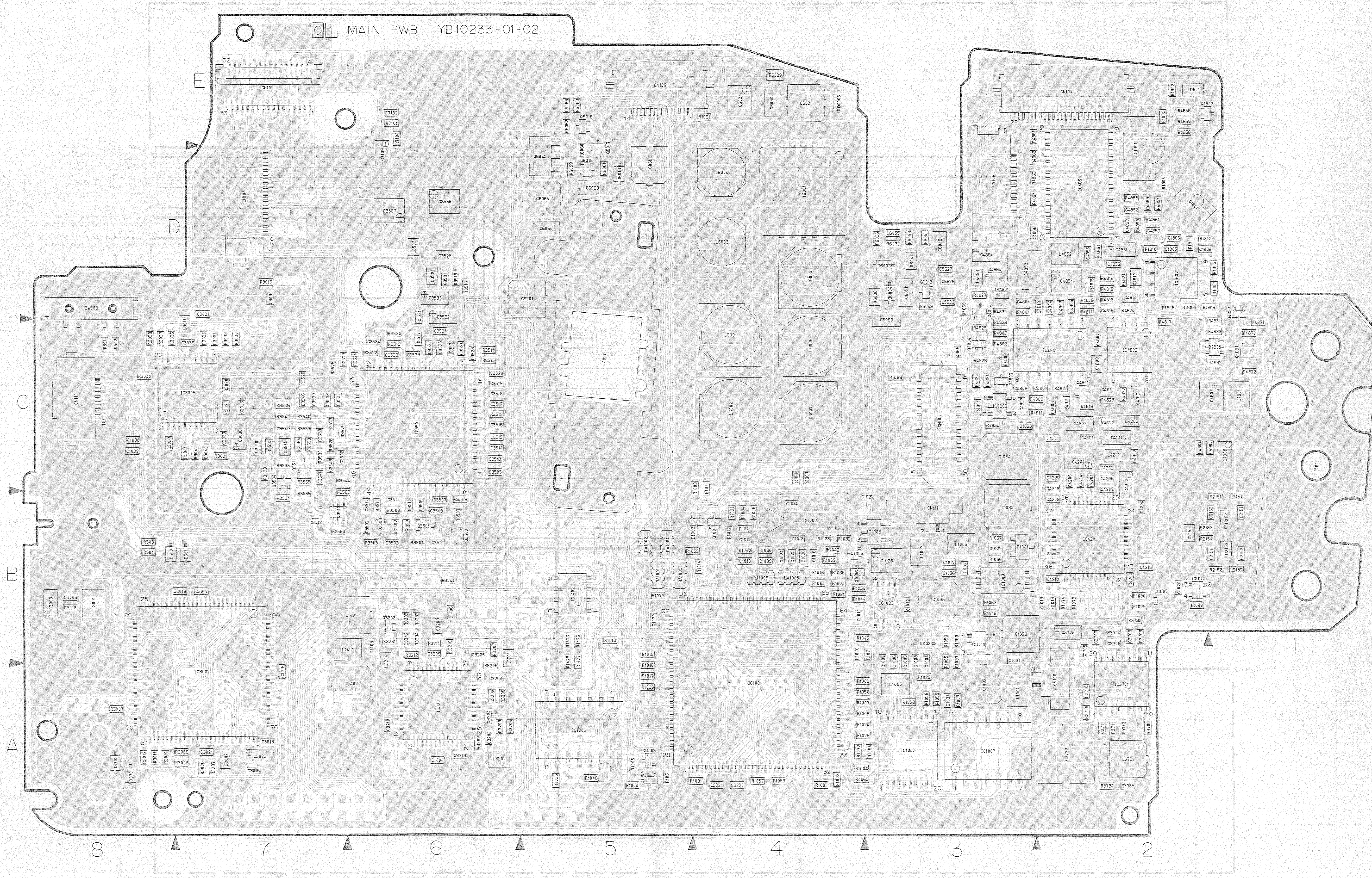
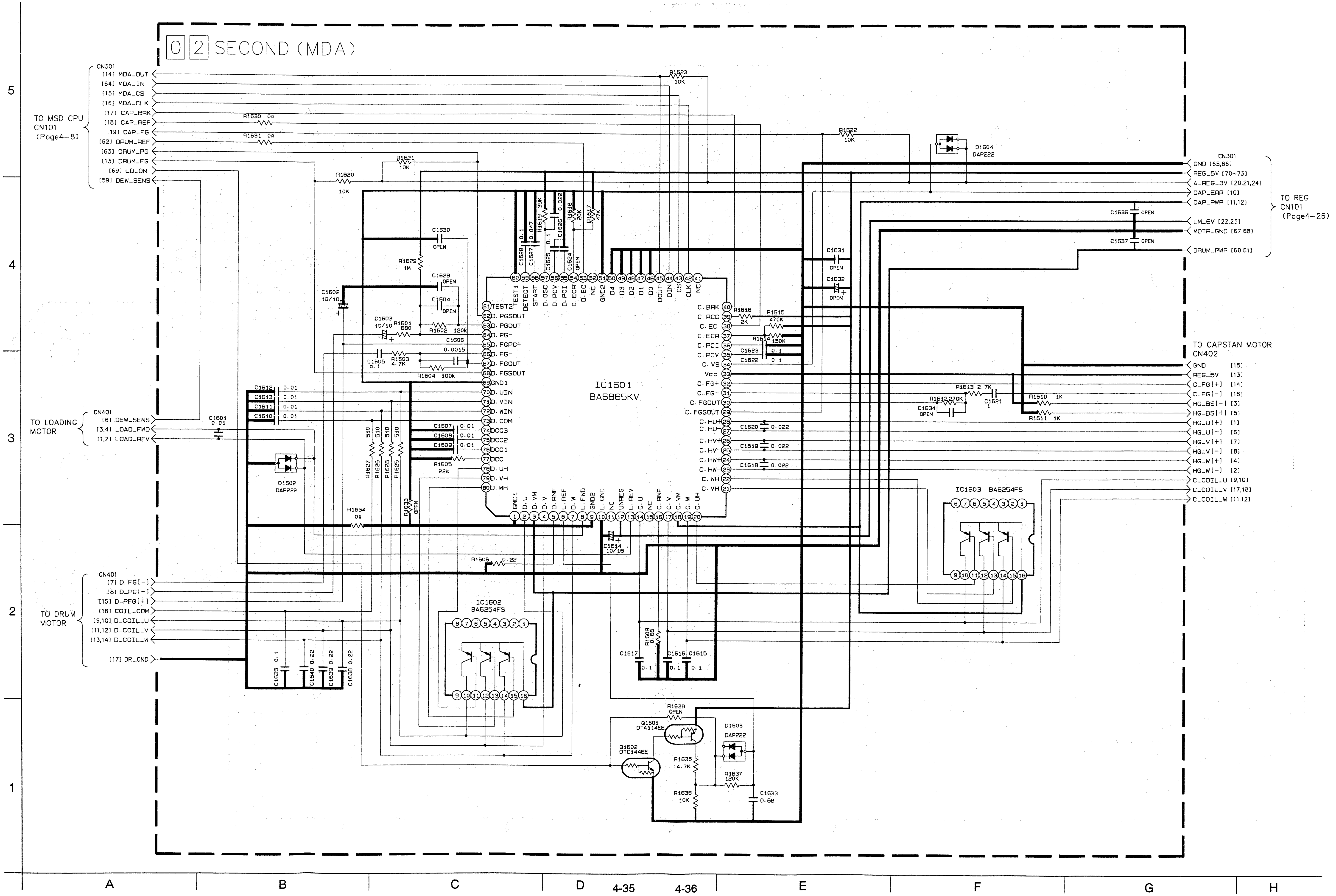
R3239	B	C	5A
R3241	A	C	6B
R3502	A	C	6B
R3503	A	C	6B
R3504	A	C	6B
R3505	A	C	6B
R3507	A	C	6B
R3508	B	C	6C
R3509	A	C	6B
R3510	A	C	6B
R3513	A	C	6C
R3514	A	C	6C
R3515	A	C	6C
R3516	A	C	6D
R3517	A	C	6C
R3518	A	C	6D
R3519	A	C	6C
R3520	A	C	6C
R3521	A	C	6D
R3522	A	C	6C
R3523	A	C	7C
R3524	A	C	6C
R3525	A	C	7C
R3526	A	C	7C
R3527	A	C	7C
R3528	A	C	7C
R3529	A	C	7C
R3530	A	C	7C
R3533	A	C	7C
R3534	A	C	7B
R3535	A	C	7C
R3536	A	C	7C
R3537	A	C	7C
R3538	A	C	7C
R3539	A	C	7C
R3540	A	C	7C
R3541	A	C	7C
R3564	A	C	7C
R3565	A	C	7C
R3566	A	C	7B
R3567	A	C	7B
R3568	A	C	7B
R3703	A	C	2B
R3704	A	C	2B
R3705	B	C	2B
R3706	B	C	2A
R3707	B	C	2A
R3708	A	C	2A
R3709	A	C	2A
R3710	A	C	2A
R3711	A	C	2A
R3712	B	C	2A
R3713	B	C	2A
R3714	B	C	2A
R3715	B	C	3A
R3716	B	C	3A
R3717	B	C	3A
R3718	B	C	3A
R3719	B	C	3A
R3720	B	C	3A
R3721	B	C	3A
R3722	B	C	3A
R3723	B	C	3A
R3724	B	C	3A
R3725	B	C	2A
R3726	B	C	2A
R3731	B	C	1B
R3732	B	C	1B
R3733	A	C	2B
R3734	A	C	2A
R3735	A	C	2A
R4301	B	C	3B
R4302	B	C	2B
R4303	B	C	2C
R4304	B	C	3C
R4305	B	C	3D
R4313	B	C	3C
R4314	B	C	3B
R4315	B	C	4C
R4801	A	C	3C
R4802	A	C	3C
R4803	A	C	2D
R4804	A	C	3D
R4805	A	C	2D
R4806	A	C	2D
R4807	A	C	3C
R4808	A	C	3C
R4809	A	C	2C
R4810	A	C	2C
R4811	A	C	2C
R4812	A	C	2C
R4813	A	C	2C
R4814	A	C	2D
R4815	A	C	2D
R4816	A	C	2D
R4817	A	C	2C
R4818	A	C	2D
R4819	A	C	2D
R4820	A	C	2D
R4821	A	C	2D
R4822	A	C	2C
R4823	A	C	2C
R4824	A	C	3C
R4825	A	C	3C
R4826	A	C	3C
R4827	A	C	3D
R4828	A	C	3C
R4829	A	C	3C
R4830	A	C	3D
R4831	A	C	1C
R4832	A	C	1C
R4833	A	C	1C
R4834	A	C	3C
R4854	A	C	2D
R4855	A	C	2D
R4856	A	C	2E
R4857	A	C	2E
R4858	A	C	2E
R4861	A	C	3E
R4862	A	C	3D
R4863	A	C	3D
R4864	A	C	3D
R4865	A	C	4A
R4866	A	C	4C
R4867	A	C	4C
R4868	A	C	3D
R4869	A	C	3C
R4870	A	C	1C
R4871	A	C	1C
R4872	A	C	1C
R5501	B	C	2E
R5502	B	C	2E
R5503	B	C	2E
R5504	B	C	2D
R5505	B	C	3D
R5506	B	C	2D
R5507	B	C	2D
R5508	B	C	2D
R5511	B	C	3D
R5512	B	C	3D
R5513	B	C	3D
R5514	B	C	3D
R5515	B	C	3D
R5516	B	C	3C
R5517	B	C	3C
R5520	B	C	3D
R5610	B	C	3C
R5611	B	C	3C
R5614	B	C	3C
R5619	B	C	3C
R6001	B	C	4D
R6002	B	C	4E
R6003	B	C	4E
R6004	B	C	4E
R6005	B	C	4E
R6006	B	C	4E
R6007	B	C	4E
R6008	B	C	4D
R6009	B	C	4D
R6010	B	C	4D
R6011	B	C	4D
R6012	B	C	4D
R6013	B	C	4D
R6014	B	C	5E
R6015	B	C	5E
R6016	B	C	5D
R6017	B	C	5E
R6018	B	C	5E
R6019	B	C	5D
R6020	B	C	5D
R6021	B	C	5D
R6022	B	C	5E
R6023	B	C	4D
R6024	B	C	4D
R6025	B	C	4D
R6026	B	C	4D
R6027	B	C	4C
R6028	B	C	4C
R6029	B	C	4C
R6030	B	C	4C
R6031	B	C	4C
R6032	B	C	4C
R6033	B	C	5C
R6034	B	C	4D
R6035	B	C	4D
R6036	A	C	3D
R6037	A	C	3D
R6038	A	C	3D
R6039	A	C	4E
R6040	B	C	5E
R6041	A	C	3D
R6043	B	C	4D
R6044	B	C	4D
R6045	B	C	4D
R6046	B	C	4D
R6047	B	C	4C
R6048	B	C	3D
R6049	A	C	3D
R6050	B	C	5C
R6056	B	C	4E
R6057	A	C	3D
R6058	A	C	3D
R6059	A	C	5D
R6060	A	C	5D
R6061	A	C	5D
R6062	A	C	5E
R6063	A	C	5E
R6201	B	C	5C
R6202	B	C	5D
R6203	B	C	5D
R6204	B	C	6D
R7101	A	C	6E
R7102	A	C	6E
R7103	B	C	6E
R7104	A	C	6E
R7106	B	C	6E
R7107	B	C	6E
R7108	B	C	7E
R7109	B	C	6E
R7111	B	C	6E
R7112	B	C	6E
R7113	B	C	5E
R7115	B	C	6E
R7119	B	C	6E
R7120	B	C	6E
R7121	B	C	6E
RA1001	A	C	5B
RA1002	A	C	5B
RA1003	A	C	5B
RA1004	A	C	5B
RA1005	A	C	4B
RA1006	A	C	4B
RA1401	B	C	6A
RA1402	B	C	5B
RA1403	B	C	5B
TEST POINT			
TP1	A	C	6A
TP7	A	C	7C
TP9	A	C	6B
TP10	A	C	6B
TP11	A	C	6B
TP12	A	C	6B
TP13	A	C	6B
TP14	A	C	6B
TP15	A	C	6B
TP18	A	C	6B
TP19	A	C	6B
TP44	A	C	5B
TP45	A	C	5B
TP46	A	C	6B
TP47	A	C	5B
TP49	A	C	5B
TP50	A	C	7B
TP51	A	C	6B
TP54	A	C	6B
TP55	A	C	6B
TP56	A	C	5B
TP57	A	C	6B
TP58	A	C	6B
TP59	A	C	5B
TP60	A	C	5B
TP61	A	C	8A
TP62	A	C	5A
TP63	A	C	5A
TP64	A	C	5A
TP67	A	C	8A
TP68	A	C	5A
TP69	A	C	5A
TP72	A	C	5A
TP73	A	C	6A
TP74	A	C	5A
TP75	A	C	6A
TP77	A	C	6A
TP78	A	C	5A
TP80	A	C	4A
TP82	A	C	3B
TP94	A	C	6B
TP117	A	C	6A
TP118	A	C	6A
TP119	A	C	6A
TP124	A	C	6A
TP128	A	C	6A
TP129	A	C	5B
TP131	A	C	7A
TP135	A	C	7A
TP136	A	C	6A
TP137	A	C	6A
TP139	A	C	6A
TP140	A	C	6A
TP141	A	C	7A
TP142	A	C	7A
TP143	A	C	7A
TP144	A	C	7A
TP145	A	C	7A
TP146	A	C	7A
TP147	A	C	7A
TP148	A	C	7A
TP149	A	C	7A
TP150	A	C	7A
TP151	A	C	7A
TP152	A	C	7A
TP153	A	C	7A
TP154	A	C	7A
TP200	A	C	7C
TP4801	A	C	3D
TP6001	B	C	3D
OTHER			
F6001	B	C	5C
F6002	B	C	5C
F6003	B	C	5D
F6004	B	C	5D
F6005	B	C	4D
F6006	B	C	4D
F7101	B	C	5E
J502	A	D	5C
J503	B	D	8B
J504	A	D	1C
J505	B	D	8A
SW503	A	C	8D
T6001	A	C	4D
X1001	B	C	3A
X1002	A	C	4B
X1401	B	C	6B
X3001	B	C	8B
X4301	B	C	4B

COMPONENT SIDE (A)

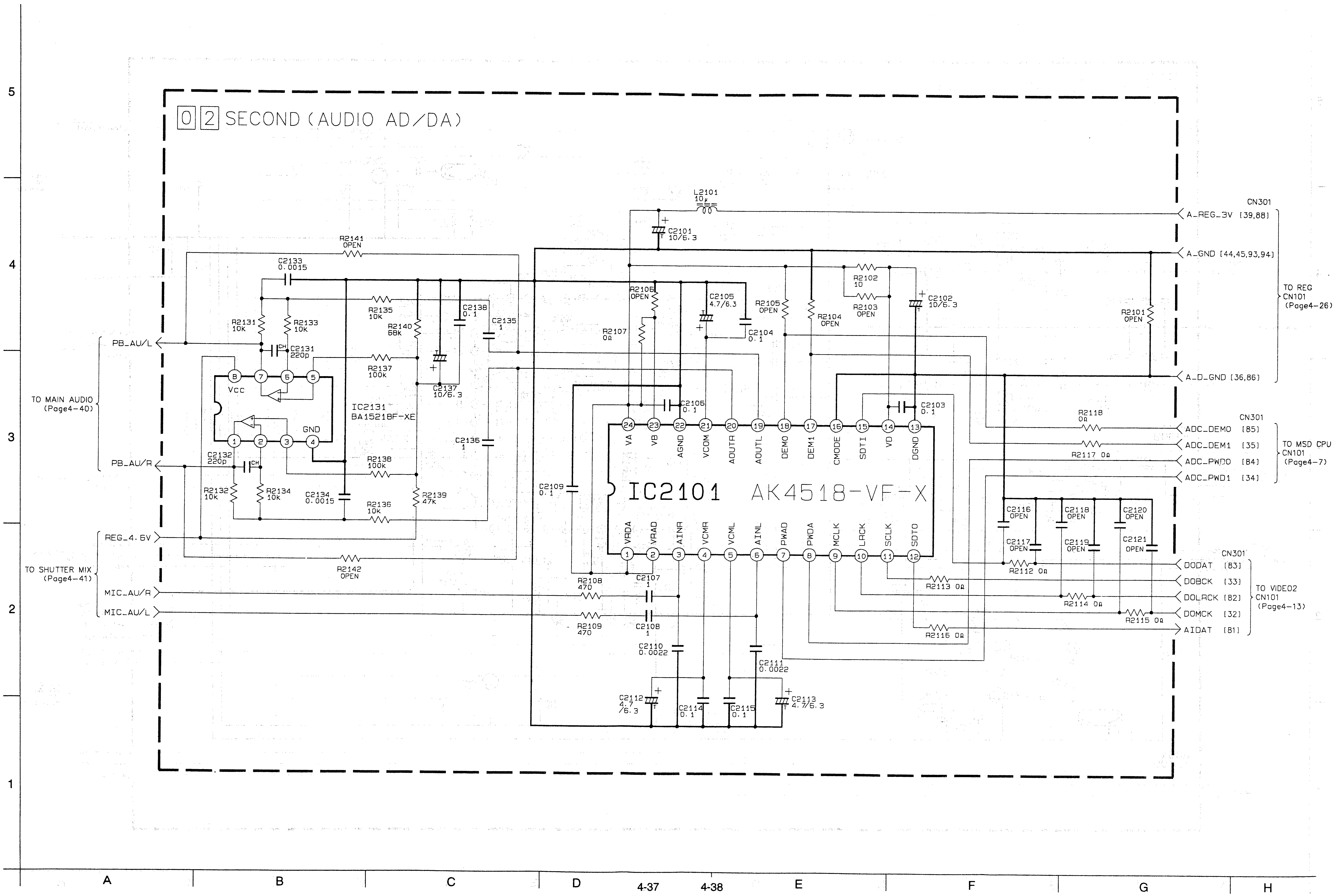

01 MAIN PWB YB10233-01-02
E
D
C
B
A
8
7
6
5
4
3
2
1
CN102
CN104
CN109
CN107
CN110
CN111
SW503
IC3005
IC3501
IC3002
IC3201
IC1001
IC1002
IC1005
IC1007
IC1402
IC4201
IC4601
IC4602
IC4851
IC1802
IC3701
X1002
L6001
L6002
L6003
L6004
L6005
L6006
L6007
T6001
L1401
C1401
C1402

4.15 MDA SCHEMATIC DIAGRAM

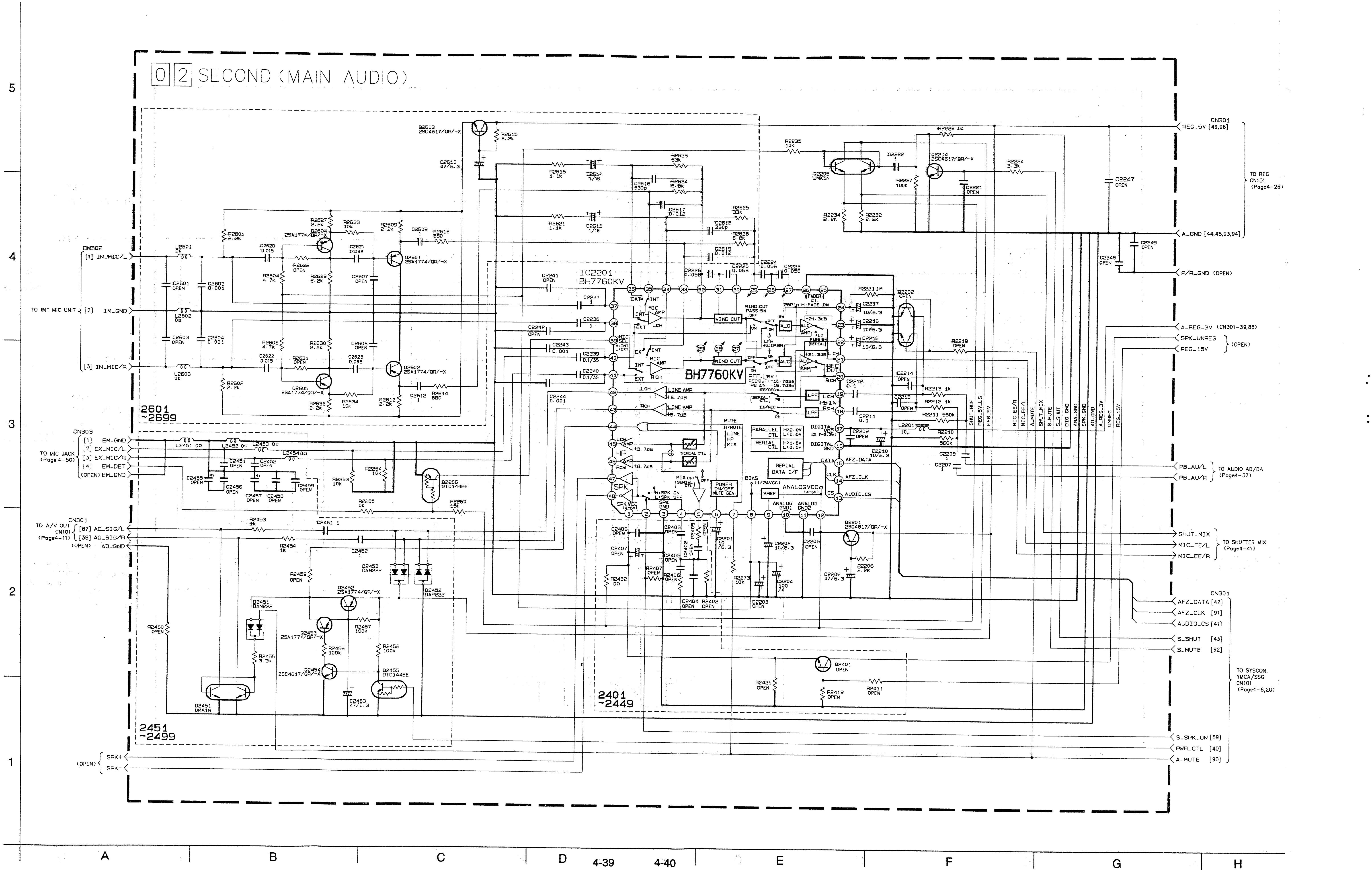


02 SECOND (MDA)
TO MSD CPU CN101 (Page4-8)
CN301
[14] MDA_OUT
[64] MDA_IN
[15] MDA_CS
[16] MDA_CLK
[17] CAP_BRK
[18] CAP_REF
[19] CAP_FG
[62] DRUM_REF
[63] DRUM_PG
[13] DRUM_FG
[69] LD_ON
[59] DEW_SENS
TO LOADING MOTOR
CN401
[6] DEW_SENS
[3,4] LOAD_FWD
[1,2] LOAD_REV
TO DRUM MOTOR
CN401
[7] D_FG[-]
[8] D_PG[-]
[15] D_PFG[+]
[16] COIL_COM
[9,10] D_COIL_U
[11,12] D_COIL_V
[13,14] D_COIL_W
[17] DR_GND
TO REG CN101 (Page4-26)
CN301
GND [65,66]
REG_5V [70~73]
A_REG_3V [20,21,24]
CAP_ERR [10]
CAP_PWR [11,12]
LM_6V [22,23]
MOTR_GND [67,68]
DRUM_PWR [60,61]
TO CAPSTAN MOTOR CN402
GND [15]
REG_5V [13]
C_FG[+] [14]
C_FG[-] [16]
HG_BS[-] [3]
HG_BS[+] [5]
HG_U[+] [1]
HG_U[-] [6]
HG_V[+] [7]
HG_V[-] [8]
HG_W[+] [4]
HG_W[-] [2]
C_COIL_U [9,10]
C_COIL_V [17,18]
C_COIL_W [11,12]
IC1601 BA6865KV
IC1602 BA6254FS
IC1603 BA6254FS
D1602 DAP222
D1603 DAP222
D1604 DAP222
Q1601 DTA114EE
Q1602 DTC144EE
R1623 10K
R1622 10K
R1630 0Ω
R1631 0Ω
R1621 10K
R1620 10K
R1629 1M
R1601 680
R1602 120K
R1603 4.7K
R1604 100K
R1605 22K
R1606 0.22
R1609 0.68
R1610 1K
R1611 1K
R1612 270K
R1613 2.7K
R1614 150K
R1615 470K
R1616 2K
R1617 47K
R1618 20K
R1619 33K
R1625 510
R1626 510
R1627 510
R1628 510
R1633 OPEN
R1634 0Ω
R1635 4.7K
R1636 10K
R1637 120K
R1638 OPEN
C1601 0.01
C1602 10/10
C1603 10/10
C1604 OPEN
C1605 0.1
C1606 0.0015
C1607 0.01
C1608 0.01
C1609 0.01
C1610 0.01
C1611 0.01
C1612 0.01
C1613 0.01
C1614 10/16
C1615 0.1
C1616 0.1
C1617 0.1
C1618 0.022
C1619 0.022
C1620 0.022
C1621 1
C1622 0.1
C1623 0.1
C1624 OPEN
C1625 0.1
C1626 0.022
C1627 0.047
C1628 0.1
C1629 OPEN
C1630 OPEN
C1631 OPEN
C1632 OPEN
C1633 0.68
C1634 OPEN
C1635 0.1
C1636 OPEN
C1637 OPEN
C1638 0.22
C1639 0.22
C1640 0.22
1 GND1
2 D.U
3 D.VM
4 D.V
5 D.RNF
6 L.REF
7 D.W
8 L.FWD
9 GND2
10 L.GND
11 NC
12 UNREG
13 L.REV
14 C.U
15 NC
16 C.RNF
17 C.V
18 C.VM
19 C.W
20 C.UH
21 C.VH
22 C.WH
23 C.HW-
24 C.HW+
25 C.HV-
26 C.HV+
27 C.HU-
28 C.HU+
29 C.FGSOUT
30 C.FGOUT
31 C.FG-
32 C.FG+
33 Vcc
34 C.VS
35 C.PCV
36 C.PCI
37 C.ECR
38 C.EC
39 C.RCC
40 C.BRK
41 NC
42 CLK
43 CS
44 DIN
45 DOUT
46 D0
47 D1
48 D2
49 D3
50 D4
51 GND2
52 NC
53 D.EC
54 D.ECR
55 D.PCI
56 D.PCV
57 D.OSC
58 START
59 DETECT
60 TEST1
61 TEST2
62 D.PGSOUT
63 D.PGOUT
64 D.PG-
65 D.FGPG+
66 D.FG-
67 D.FGOUT
68 D.FGSOUT
69 GND1
70 D.UIN
71 D.VIN
72 D.WIN
73 D.COM
74 DCC3
75 DCC2
76 DCC1
77 DCC
78 D.UH
79 D.VH
80 D.WH
1
2
3
4
5
A
B
C
D
E
F
G
H

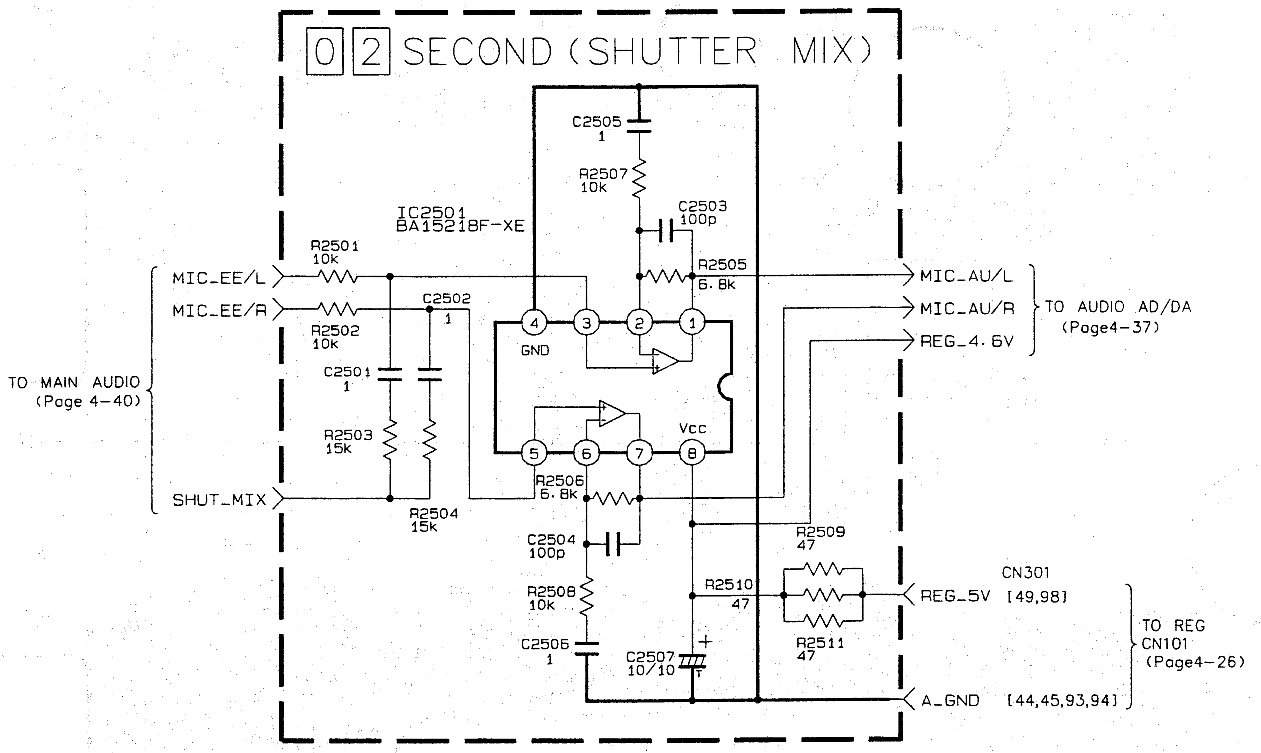
4.16 AUDIO AD/DA SCHEMATIC DIAGRAM


02 SECOND (AUDIO AD/DA)
5
4
3
2
1
A
B
C
D
E
F
G
H
L2101 10μ
C2101 10/6.3
R2141 OPEN
C2133 0.0015
R2131 10k
R2133 10k
R2135 10k
R2140 68k
C2138 0.1
C2135 1
C2131 220p
R2137 100k
C2137 10/6.3
IC2131 BA15218F-XE
Vcc
GND
C2132 220p
R2138 100k
C2136 1
R2132 10k
R2134 10k
C2134 0.0015
R2136 10k
R2139 47k
R2142 OPEN
PB_AU/L
PB_AU/R
TO MAIN AUDIO (Page4-40)
REG_4.6V
MIC_AU/R
MIC_AU/L
TO SHUTTER MIX (Page4-41)
R2106 OPEN
R2107 0Ω
C2105 4.7/6.3
C2104 0.1
R2105 OPEN
R2104 OPEN
R2102 10
R2103 OPEN
C2102 10/6.3
C2106 0.1
C2103 0.1
C2109 0.1
IC2101 AK4518-VF-X
VA
VB
AGND
VCOM
AOUTR
AOUTL
DEM0
DEM1
CMODE
SDTI
VD
DGND
VRDA
VRAD
AINR
VCMR
VCML
AINL
PWAD
PWDA
MCLK
LRCK
SCLK
SDTO
R2108 470
C2107 1
R2109 470
C2108 1
C2110 0.0022
C2111 0.0022
C2112 4.7/6.3
C2114 0.1
C2115 0.1
C2113 4.7/6.3
R2101 OPEN
CN301
A_REG_3V [39,88]
A_GND [44,45,93,94]
A_D_GND [36,86]
TO REG CN101 (Page4-26)
R2118 0Ω
R2117 0Ω
CN301
ADC_DEM0 [85]
ADC_DEM1 [35]
ADC_PWD0 [84]
ADC_PWD1 [34]
TO MSD CPU CN101 (Page4-7)
C2116 OPEN
C2117 OPEN
C2118 OPEN
C2119 OPEN
C2120 OPEN
C2121 OPEN
R2112 0Ω
R2113 0Ω
R2114 0Ω
R2115 0Ω
R2116 0Ω
CN301
DODAT [83]
DOBCK [33]
DOLRCK [82]
DOMCK [32]
AIDAT [81]
TO VIDEO2 CN101 (Page4-13)

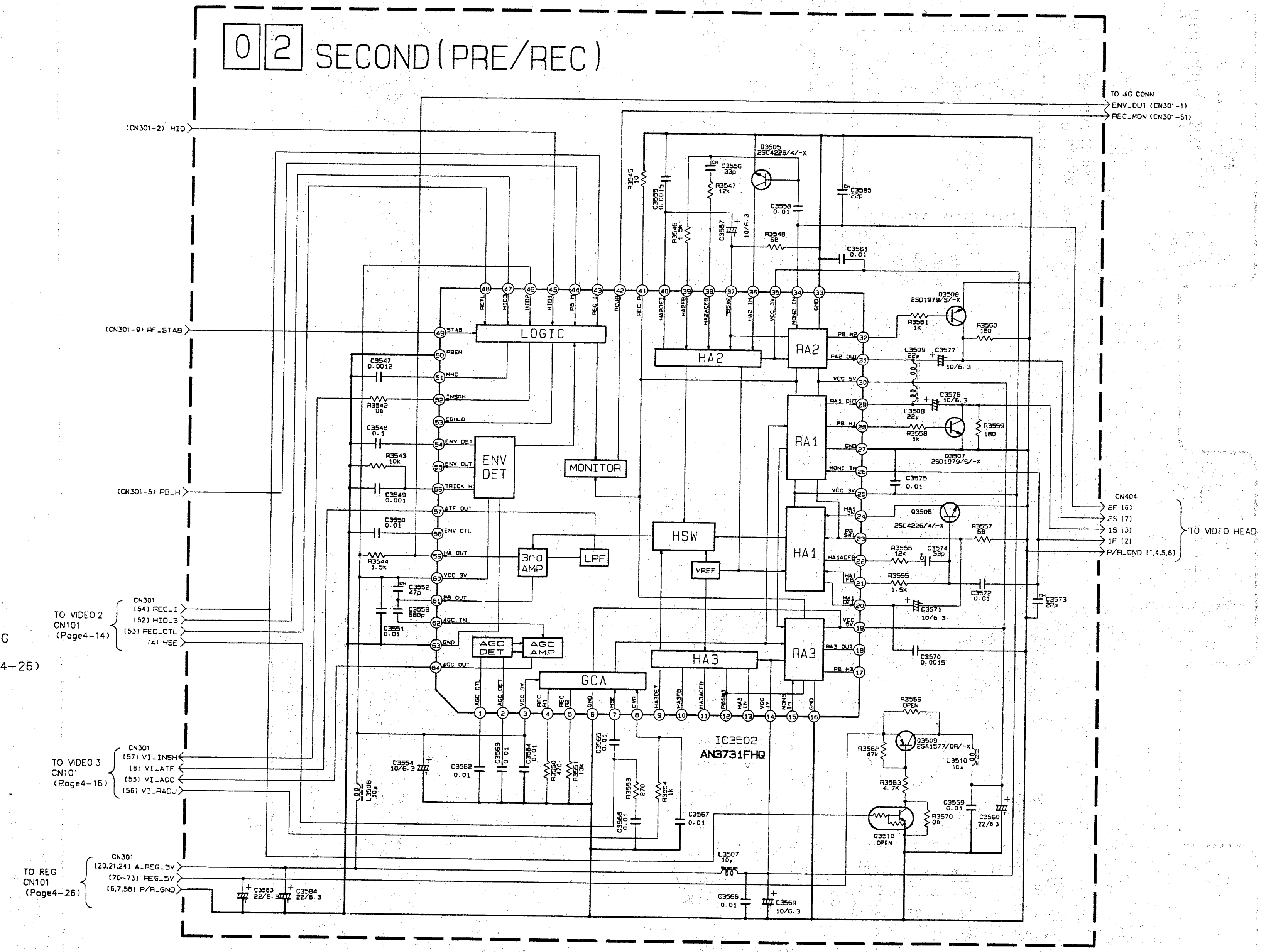
4.17 MAIN AUDIO SCHEMATIC DIAGRAM


02 SECOND (MAIN AUDIO)
IC2201
BH7760KV
CN302
[1] IN_MIC/L
[2] IM_GND
[3] IN_MIC/R
TO INT MIC UNIT
CN303
[1] EM_GND
[2] EX_MIC/L
[3] EX_MIC/R
[4] EM_DET
(OPEN) EM_GND
TO MIC JACK (Page 4-50)
CN301
TO A/V OUT CN101 (Page4-11)
[87] AO_SIG/L
[38] AO_SIG/R
(OPEN) AO_GND
(OPEN) SPK+
SPK-
CN301
REG_5V [49,98]
TO REC CN101 (Page4-26)
A_GND [44,45,93,94]
P/R_GND (OPEN)
A_REG_3V (CN301-39,88)
SPK_UNREG
REG_15V
(OPEN)
PB_AU/L
PB_AU/R
TO AUDIO AD/DA (Page4-37)
SHUT_MIX
MIC_EE/L
MIC_EE/R
TO SHUTTER MIX (Page4-41)
CN301
AFZ_DATA [42]
AFZ_CLK [91]
AUDIO_CS [41]
S_SHUT [43]
S_MUTE [92]
TO SYSCON, YMCA/SSG CN101 (Page4-6,20)
S_SPK_ON [89]
PWR_CTL [40]
A_MUTE [90]
2601 ~2699
2451 ~2499
2401 ~2449
Q2603 2SC4617/QR/-X
Q2604 2SA1774/QR/-X
Q2601 2SA1774/QR/-X
Q2602 2SA1774/QR/-X
Q2605 2SA1774/QR/-X
Q2206 DTC144EE
Q2205 UMX1N
Q2204 2SC4617/QR/-X
Q2202 OPEN
Q2201 2SC4617/QR/-X
Q2401 OPEN
Q2451 UMX1N
Q2452 2SA1774/QR/-X
Q2453 2SA1774/QR/-X
Q2454 2SC4617/QR/-X
Q2455 DTC144EE
D2451 DAN222
D2452 DAP222
D2453 DAN222
MIC AMP
MIC SEL
WIND CUT
ALC
LINE AMP
HP AMP
SPK
SERIAL DATA I/F
POWER ON/OFF MUTE GEN.
VREF
ANALOG VCC
DIGITAL VCC
DIGITAL GND
AFZ_DATA
AFZ_CLK
AUDIO_CS
LPF
PB IN
REC OUT
FADER CTL
REF_Lev
MUTE
BIAS
SHUT_BUF
REG_5V_LS
REG_5V
MIC_EE/R
MIC_EE/L
A_MUTE
SHUT_MIX
S_MUTE
S_SHUT
DIG_GND
ANA_GND
SPK_GND
AO_GND
A_REG_3V
UNREG
REG_15V
A
B
C
D
E
F
G
H
1
2
3
4
5

4.18 SHUTTER MIX AND PRE/REC SCHEMATIC DIAGRAMS

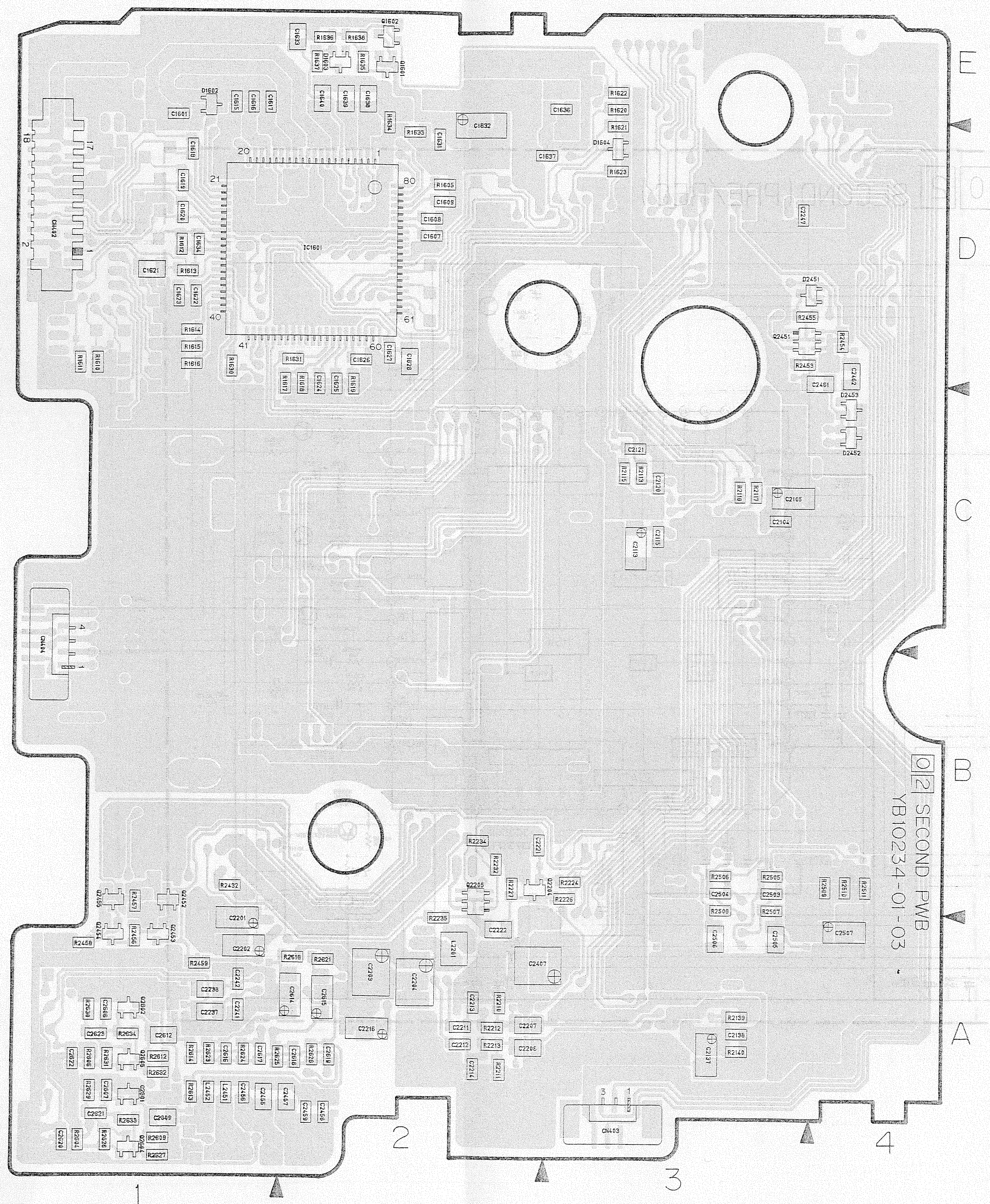


02 SECOND (SHUTTER MIX)
IC2501
BA15218F-XE
MIC_EE/L
MIC_EE/R
SHUT_MIX
TO MAIN AUDIO
(Page 4-40)
R2501 10k
R2502 10k
C2502 1
C2501 1
R2503 15k
R2504 15k
C2505 1
R2507 10k
C2503 100p
R2505 6.8k
R2506 6.8k
C2504 100p
R2508 10k
C2506 1
C2507 10/10
R2509 47
R2510 47
R2511 47
GND
Vcc
MIC_AU/L
MIC_AU/R
REG_4.6V
TO AUDIO AD/DA
(Page4-37)
CN301
REG_5V [49,98]
A_GND [44,45,93,94]
TO REG
CN101
(Page4-26)

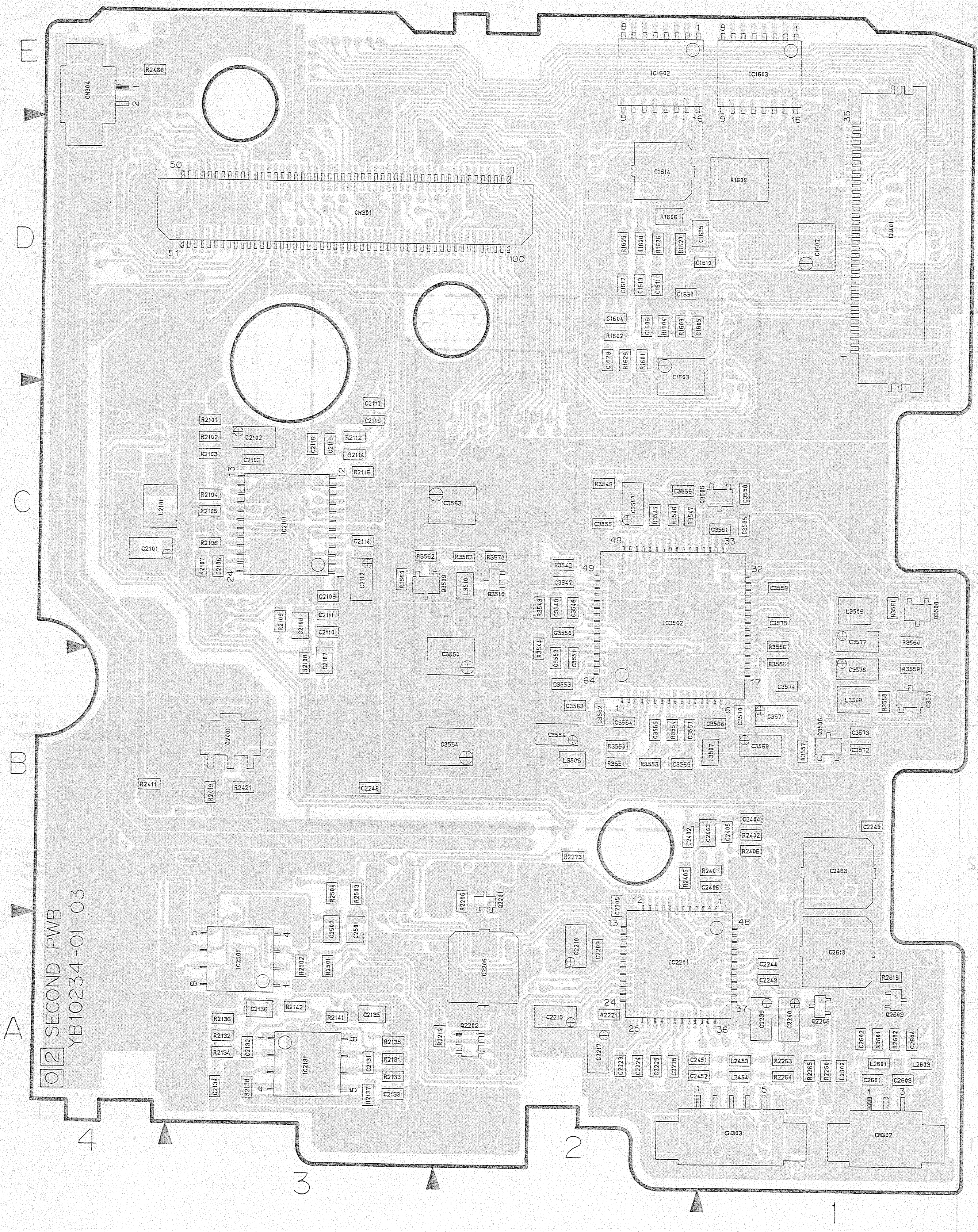


02 SECOND (PRE/REC)
(CN301-2) HID
(CN301-9) RF_STAB
(CN301-5) PB_H
TO VIDEO 2
CN101
(Page4-14)
CN301
[54] REC_I
[52] HID_3
[53] REC_CTL
[4] HSE
TO VIDEO 3
CN101
(Page4-16)
CN301
[57] VI_INSH
[8] VI_ATF
[55] VI_AGC
[56] VI_RADJ
TO REG
CN101
(Page4-26)
CN301
[20,21,24] A_REG_3V
[70~73] REG_5V
[6,7,58] P/R_GND
C3583 22/6.3
C3584 22/6.3
TO JIG CONN
ENV_OUT (CN301-1)
REC_MON (CN301-51)
CN404
2F [6]
2S [7]
1S [3]
1F [2]
P/R_GND [1,4,5,8]
TO VIDEO HEAD
LOGIC
ENV DET
MONITOR
3rd AMP
LPF
AGC DET
AGC AMP
GCA
HSW
VREF
HA2
HA1
HA3
RA2
RA1
RA3
IC3502
AN3731FHQ
RCTL
HID3
HID2
HID1
PB H
REC I
RCUB
REC R
HA2DET
HA2FB
HA2ACFB
PBSW2
HA2 IN
VCC 3V
MON2 IN
GND
STAB
PBEN
MMC
INSRH
EQHLD
ENV DET
ENV OUT
TRICK H
ATF OUT
ENV CTL
HA OUT
VCC 3V
PB OUT
AGC IN
GND
AGC OUT
AGC CTL
AGC DET
VCC 3V
REC R1
REC R2
GND
HSE
EVR
HA3DET
HA3FB
HA3ACFB
PBSW3
HA3 IN
VCC 3V
MON3 IN
GND
PB H2
PA2 OUT
VCC 5V
RA1 OUT
PB H1
GND
MONI IN
VCC 3V
HA1 IN
PB SW1
HA1ACFB
HA1 FB
HA1 DET
VCC 5V
RA3 OUT
PB H3
C3547 0.0012
R3542 0Ω
C3548 0.1
R3543 10k
C3549 0.001
C3550 0.01
R3544 1.5k
C3552 47p
C3553 680p
C3551 0.01
R3545 10
C3555 0.0015
R3546 1.5k
C3556 33p
R3547 12k
C3557 10/6.3
Q3505 2SC4226/4/-X
C3558 0.01
R3548 68
C3585 22p
C3561 0.01
Q3508 2SD1979/S/-X
R3561 1k
R3560 180
L3509 22μ
C3577 10/6.3
C3576 10/6.3
L3508 22μ
R3558 1k
R3559 180
Q3507 2SD1979/S/-X
C3575 0.01
Q3506 2SC4226/4/-X
R3557 68
R3556 12k
C3574 33p
R3555 1.5k
C3572 0.01
C3573 22p
C3571 10/6.3
C3570 0.0015
C3554 10/6.3
C3562 0.01
C3563 0.01
C3564 0.01
R3550 470
R3551 10K
C3565 0.01
R3553 270
R3554 1k
C3566 0.01
C3567 0.01
L3506 10μ
L3507 10μ
C3568 0.01
C3569 10/6.3
R3569 OPEN
Q3509 2SA1577/QR/-X
R3562 47K
L3510 10μ
R3563 4.7K
C3559 0.01
C3560 22/6.3
R3570 0Ω
Q3510 OPEN

FOIL SIDE (B)


E
D
C
B
A
1
2
3
4
02 SECOND PWB
YB10234-01-03
IC1601
CN403

COMPONENT SIDE (A)


E
D
C
B
A
1
2
3
4
02 SECOND PWB
YB10234-01-03
CN301
IC1602
IC1603
IC2101
IC3502
IC2201
CN302
CN303

COMPONENT PARTS LOCATION GUIDE (SECOND)

REF.No.	LOCATION		
CAPACITOR			
C1601	B	C	1E
C1602	A	C	1D
C1603	A	C	2D
C1604	A	C	2D
C1605	A	C	2D
C1606	A	C	2D
C1607	B	C	2D
C1608	B	C	2D
C1609	B	C	2D
C1610	A	C	2D
C1611	A	C	2D
C1612	A	C	2D
C1613	A	C	2D
C1614	A	C	2D
C1615	B	C	1E
C1616	B	C	1E
C1617	B	C	1E
C1618	B	C	1D
C1619	B	C	1D
C1620	B	C	1D
C1621	B	C	1D
C1622	B	C	1D
C1623	B	C	1D
C1624	B	C	2C
C1625	B	C	2C
C1626	B	C	2D
C1627	B	C	2D
C1628	B	C	2D
C1629	A	C	2D
C1630	A	C	2D
C1631	B	C	2D
C1632	B	C	2D
C1633	B	C	2E
C1634	B	C	1D
C1635	A	C	2D
C1636	B	C	3E
C1637	B	C	2D
C1638	B	C	2E
C1639	B	C	2E
C1640	B	C	2E
C2101	A	C	4C
C2102	A	C	3C
C2103	A	C	3C
C2104	B	C	3C
C2105	B	C	3C
C2106	A	C	3C
C2107	A	C	3B
C2108	A	C	3C
C2109	A	C	3C
C2110	A	C	3C
C2111	A	C	3C
C2112	A	C	3C
C2113	B	C	3C
C2114	A	C	3C
C2115	B	C	3C
C2116	A	C	3C
C2117	A	C	3C
C2118	A	C	3C
C2119	A	C	3C
C2120	B	C	3C
C2121	B	C	3C
C2131	A	C	3A
C2132	A	C	3A
C2133	A	C	3A
C2134	A	C	3A
C2135	A	C	3A
C2136	A	C	3A
C2137	B	C	3A
C2138	B	C	3A
C2201	B	C	1A
C2202	B	C	1A
C2203	B	C	2A
C2204	B	C	2A
C2205	A	C	2B
C2206	A	C	2A
C2207	B	C	2A
C2208	B	C	2A
C2209	A	C	2A
C2210	A	C	2A
C2211	B	C	2A
C2212	B	C	2A
C2213	B	C	2A
C2214	B	C	2A
C2215	A	C	2A
C2216	B	C	2A
C2217	A	C	2A
C2221	B	C	2B
C2222	B	C	2A
C2223	A	C	2A
C2224	A	C	2A
C2225	A	C	2A
C2226	A	C	2A
C2237	B	C	1A
C2238	B	C	1A
C2239	A	C	1A
C2240	A	C	1A
C2241	B	C	1A
C2242	B	C	1A
C2243	A	C	1A
C2244	A	C	1A
C2247	B	C	3D
C2248	A	C	3B
C2249	A	C	1B
C2402	A	C	2B
C2403	A	C	1B
C2404	A	C	1B
C2405	A	C	1B
C2406	A	C	1B
C2407	B	C	2A
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C2452	A	C	1A
C2455	B	C	1A
C2456	B	C	1A
C2457	B	C	2A
C2458	B	C	2A
C2459	B	C	2A
C2461	B	C	4D
C2462	B	C	4D
C2463	A	C	1B
C2501	A	C	3A
C2502	A	C	3A
C2503	B	C	3B
C2504	B	C	3B
C2505	B	C	3A
C2506	B	C	3A
C2507	B	C	4A
C2601	A	C	1A
C2602	A	C	1A
C2603	A	C	1A
C2604	A	C	1A
C2607	B	C	1A
C2608	B	C	1A
C2609	B	C	1A
C2612	B	C	1A
C2613	A	C	1A
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C2621	B	C	1A
C2622	B	C	1A
C2623	B	C	1A
C3547	A	C	2C
C3548	A	C	2C
C3549	A	C	2C
C3550	A	C	2C
C3551	A	C	2B
C3552	A	C	2B
C3553	A	C	2B
C3554	A	C	2B
C3555	A	C	2C
C3556	A	C	2C
C3557	A	C	2C
C3558	A	C	1C
C3559	A	C	1C
C3560	A	C	2B
C3561	A	C	1C
C3562	A	C	2B
C3563	A	C	2B
C3564	A	C	2B
C3565	A	C	2B
C3566	A	C	2B
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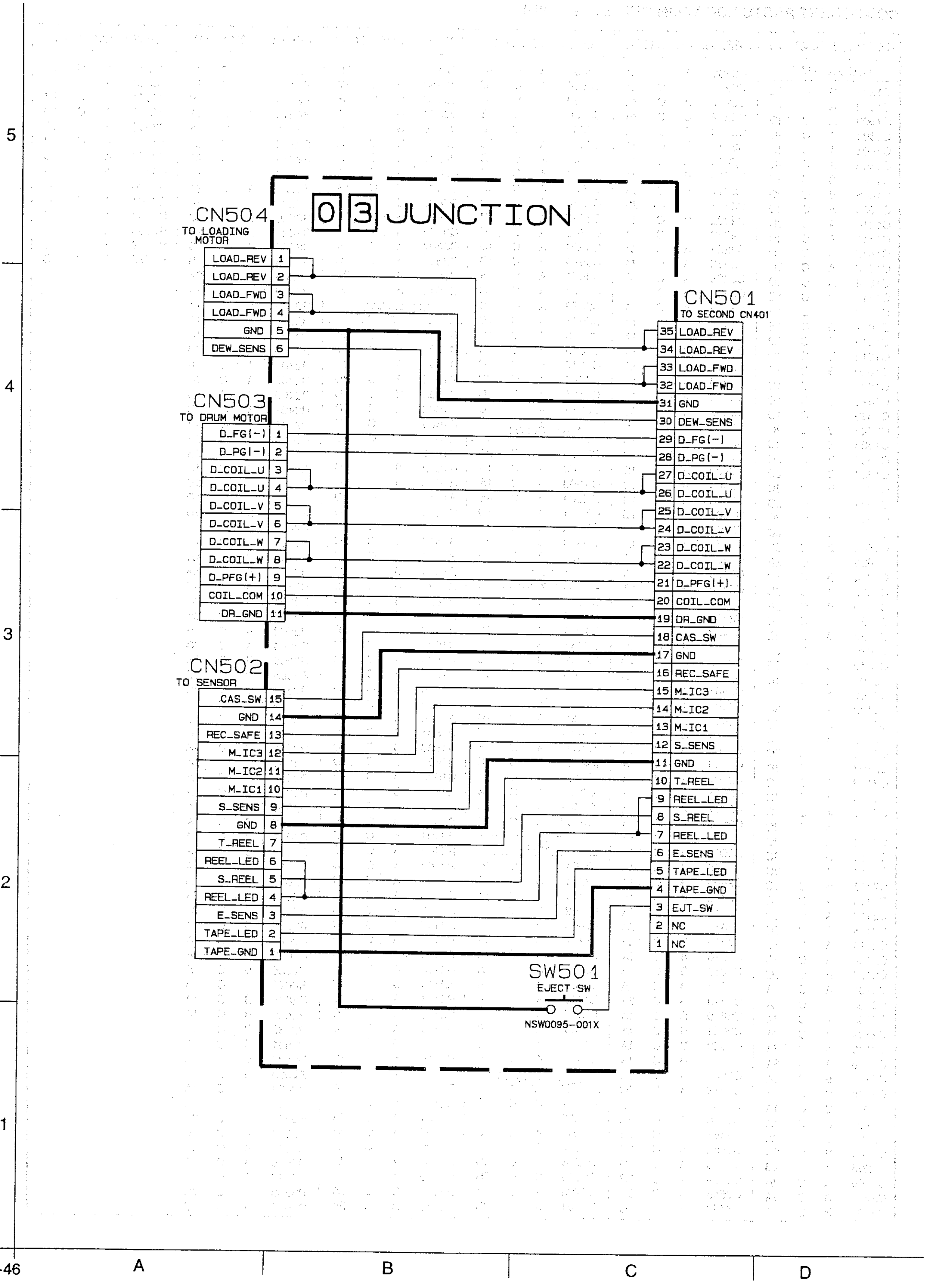
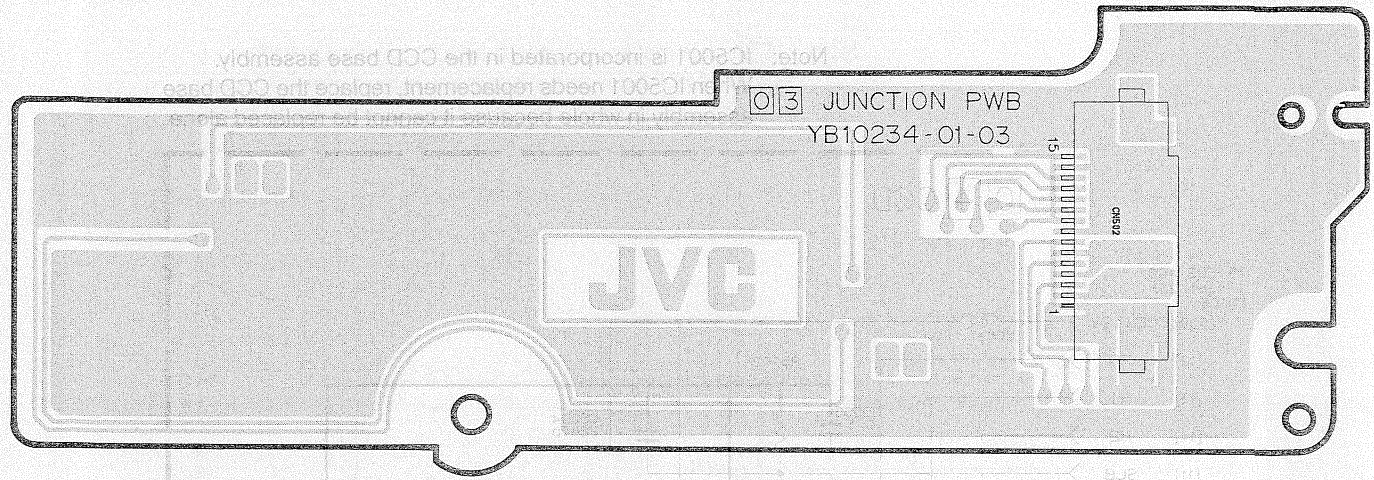
C3572	A	C	1B
C3573	A	C	1B
C3574	A	C	1B
C3575	A	C	1C
C3576	A	C	1B
C3577	A	C	1C
C3583	A	C	2C
C3584	A	C	2B
C3585	A	C	1C
CONNECTOR			
CN301	A	C	2D
CN302	A	C	1A
CN303	A	C	1A
CN304	A	C	4E
CN401	A	C	1D
CN402	B	C	1D
CN403	B	C	3A
CN404	B	C	1B
DIODE			
D1602	B	C	1E
D1603	B	C	2E
D1604	B	C	3D
D2451	B	C	4D
D2452	B	C	4C
D2453	B	C	4C
IC			
IC1601	B	C	2D
IC1602	A	C	2E
IC1603	A	C	1E
IC2101	A	C	3C
IC2131	A	C	3A
IC2201	A	C	2A
IC2501	A	C	3A
IC3502	A	C	2C
COIL			
L2101	A	C	4C
L2201	B	C	2A
L2451	B	C	1A
L2452	B	C	1A
L2453	A	C	1A
L2454	A	C	1A
L2601	A	C	1A
L2602	A	C	1A
L2603	A	C	1A
L3506	A	C	2B
L3507	A	C	1B
L3508	A	C	1B
L3509	A	C	1C
L3510	A	C	2C
TRANSISTOR			
Q1601	B	C	2E
Q1602	B	C	2E
Q2201	A	C	2B
Q2202	A	C	2A
Q2204	B	C	2B
Q2205	B	C	2B
Q2206	A	C	1A
Q2401	A	C	3B
Q2451	B	C	3D
Q2452	B	C	1B
Q2453	B	C	1A
Q2454	B	C	1A
Q2455	B	C	1B
Q2601	B	C	1A
Q2602	B	C	1A
Q2603	A	C	1A
Q2604	B	C	1A
Q2605	B	C	1A
Q3505	A	C	1C
Q3506	A	C	1B
Q3507	A	C	1B
Q3508	A	C	1C
Q3509	A	C	3C
Q3510	A	C	2C
RESISTOR			
R1601	A	C	2D
R1602	A	C	2D
R1603	A	C	2D
R1604	A	C	2D
R1605	B	C	2D
R1606	A	C	2D
R1609	A	C	1D
R1610	B	C	1D
R1611	B	C	1D
R1612	B	C	1D
R1613	B	C	1D
R1614	B	C	1D
R1615	B	C	1D
R1616	B	C	1D
R1617	B	C	2C
R1618	B	C	2C
R1619	B	C	2C
R1620	B	C	3E
R1621	B	C	3D
R1622	B	C	3E
R1623	B	C	3D
R1625	A	C	2D
R1626	A	C	2D
R1627	A	C	2D
R1628	A	C	2D
R1629	A	C	2D
R1630	B	C	1D
R1631	B	C	2D
R1633	B	C	2D
R1634	B	C	2D
R1635	B	C	2E
R1636	B	C	2E
R1637	B	C	2E
R1638	B	C	2E
R2101	A	C	3C
R2102	A	C	3C
R2103	A	C	3C
R2104	A	C	3C
R2105	A	C	3C
R2106	A	C	3C
R2107	A	C	3C
R2108	A	C	3B
R2109	A	C	3C
R2112	A	C	3C
R2113	B	C	3C
R2114	A	C	3C
R2115	B	C	3C
R2116	A	C	3C
R2117	B	C	3C
R2118	B	C	3C
R2131	A	C	3A
R2132	A	C	3A
R2133	A	C	3A
R2134	A	C	3A
R2135	A	C	3A
R2136	A	C	3A
R2137	A	C	3A
R2138	A	C	3A
R2139	B	C	3A
R2140	B	C	3A
R2141	A	C	3A
R2142	A	C	3A
R2206	A	C	2B
R2210	B	C	2A
R2211	B	C	2A
R2212	B	C	2A
R2213	B	C	2A
R2219	A	C	2A
R2221	A	C	2A
R2224	B	C	3B
R2226	B	C	3B
R2227	B	C	2B
R2232	B	C	2B
R2234	B	C	2B
R2235	B	C	2A
R2260	A	C	1A
R2263	A	C	1A
R2264	A	C	1A
R2265	A	C	1A
R2273	A	C	2B
R2402	A	C	1B
R2405	A	C	2B
R2406	A	C	1B
R2407	A	C	1B
R2411	A	C	4B
R2419	A	C	3B
R2421	A	C	3B
R2432	B	C	1B
R2453	B	C	3D
R2454	B	C	4D
R2455	B	C	3D
R2456	B	C	1A
R2457	B	C	1B
R2458	B	C	1A
R2459	B	C	1A
R2460	A	C	4E
R2501	A	C	3A
R2502	A	C	3A
R2503	A	C	3B
R2504	A	C	3B
R2505	B	C	3B
R2506	B	C	3B
R2507	B	C	3B
R2508	B	C	3B
R2509	B	C	4B
R2510	B	C	4B
R2511	B	C	4B
R2601	A	C	1A
R2602	A	C	1A
R2604	B	C	1A
R2606	B	C	1A
R2609	B	C	1A
R2612	B	C	1A
R2613	B	C	1A
R2614	B	C	1A
R2615	A	C	1A
R2618	B	C	2A
R2621	B	C	2A
R2623	B	C	1A
R2624	B	C	1A
R2625	B	C	2A
R2626	B	C	2A
R2627	B	C	1A
R2628	B	C	1A
R2629	B	C	1A
R2630	B	C	1A
R2631	B	C	1A
R2632	B	C	1A
R2633	B	C	1A
R2634	B	C	1A
R3542	A	C	2C
R3543	A	C	2C
R3544	A	C	2C
R3545	A	C	2C
R3546	A	C	2C
R3547	A	C	2C
R3548	A	C	2C
R3550	A	C	2B
R3551	A	C	2B
R3553	A	C	2B
R3554	A	C	2B
R3555	A	C	1B
R3556	A	C	1C
R3557	A	C	1B
R3558	A	C	1B
R3559	A	C	1B
R3560	A	C	1C
R3561	A	C	1C
R3562	A	C	3C
R3563	A	C	2C
R3569	A	C	3C
R3570	A	C	2C

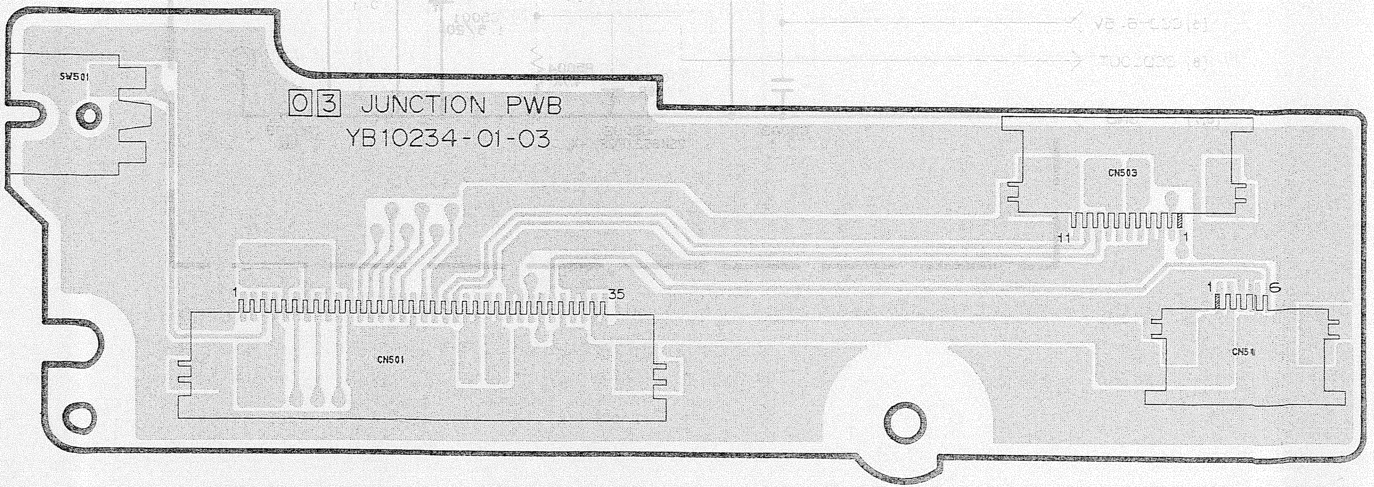
4.20 JUNCTION SCHEMATIC DIAGRAM


03 JUNCTION
CN504
TO LOADING MOTOR
LOAD_REV 1
LOAD_REV 2
LOAD_FWD 3
LOAD_FWD 4
GND 5
DEW_SENS 6
CN503
TO DRUM MOTOR
D_FG(-) 1
D_PG(-) 2
D_COIL_U 3
D_COIL_U 4
D_COIL_V 5
D_COIL_V 6
D_COIL_W 7
D_COIL_W 8
D_PFG(+) 9
COIL_COM 10
DR_GND 11
CN502
TO SENSOR
CAS_SW 15
GND 14
REC_SAFE 13
M_IC3 12
M_IC2 11
M_IC1 10
S_SENS 9
GND 8
T_REEL 7
REEL_LED 6
S_REEL 5
REEL_LED 4
E_SENS 3
TAPE_LED 2
TAPE_GND 1
CN501
TO SECOND CN401
35 LOAD_REV
34 LOAD_REV
33 LOAD_FWD
32 LOAD_FWD
31 GND
30 DEW_SENS
29 D_FG(-)
28 D_PG(-)
27 D_COIL_U
26 D_COIL_U
25 D_COIL_V
24 D_COIL_V
23 D_COIL_W
22 D_COIL_W
21 D_PFG(+)
20 COIL_COM
19 DR_GND
18 CAS_SW
17 GND
16 REC_SAFE
15 M_IC3
14 M_IC2
13 M_IC1
12 S_SENS
11 GND
10 T_REEL
9 REEL_LED
8 S_REEL
7 REEL_LED
6 E_SENS
5 TAPE_LED
4 TAPE_GND
3 EJT_SW
2 NC
1 NC
SW501
EJECT SW
NSW0095-001X
5
4
3
2
1
A
B
C
D

FOIL SIDE (B)

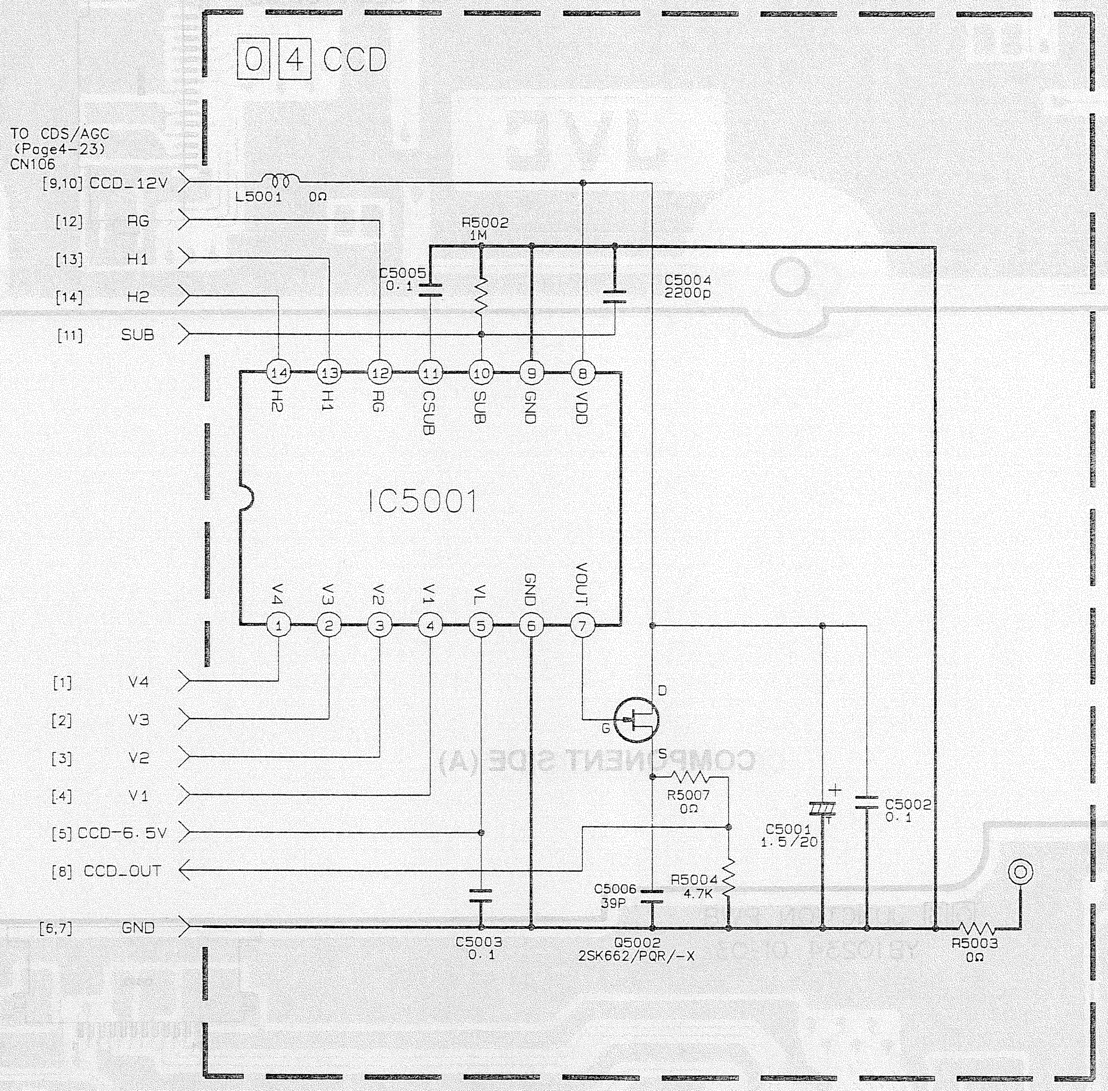

03 JUNCTION PWB
YB10234-01-03
CN502
15
1

COMPONENT SIDE (A)


SW501
03 JUNCTION PWB
YB10234-01-03
CN503
11
1
1
35
CN501
1
6

.22 CCD SCHEMATIC DIAGRAM

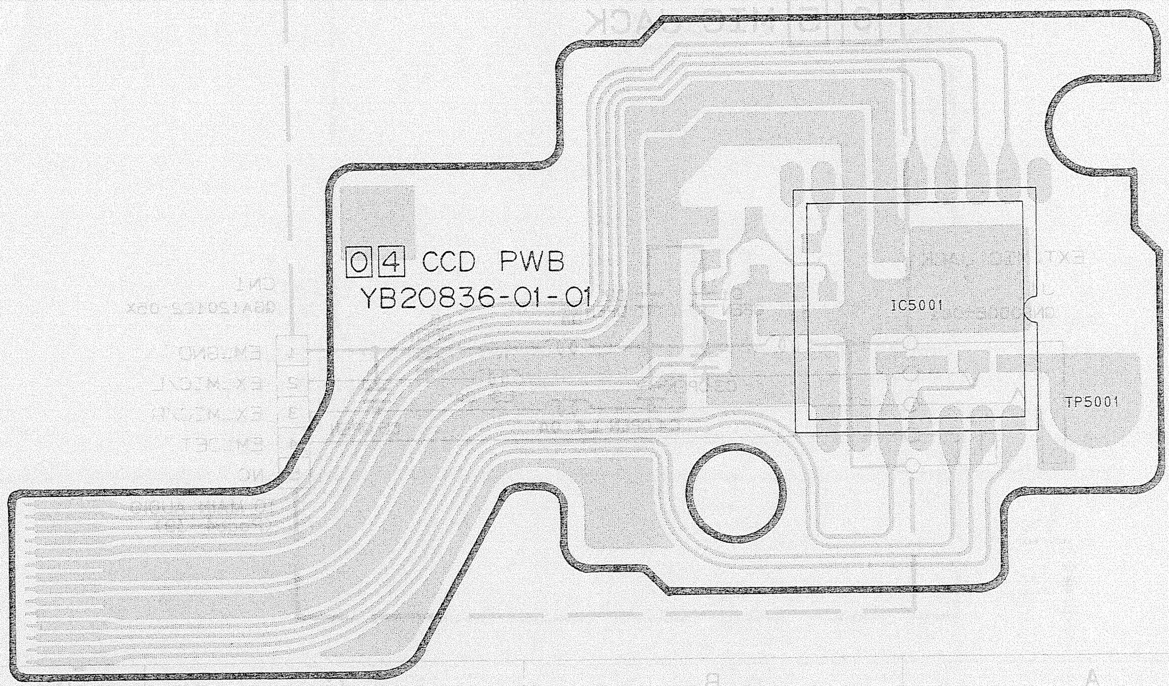
Note: IC5001 is incorporated in the CCD base assembly.
When IC5001 needs replacement, replace the CCD base assembly in whole because it cannot be replaced alone.



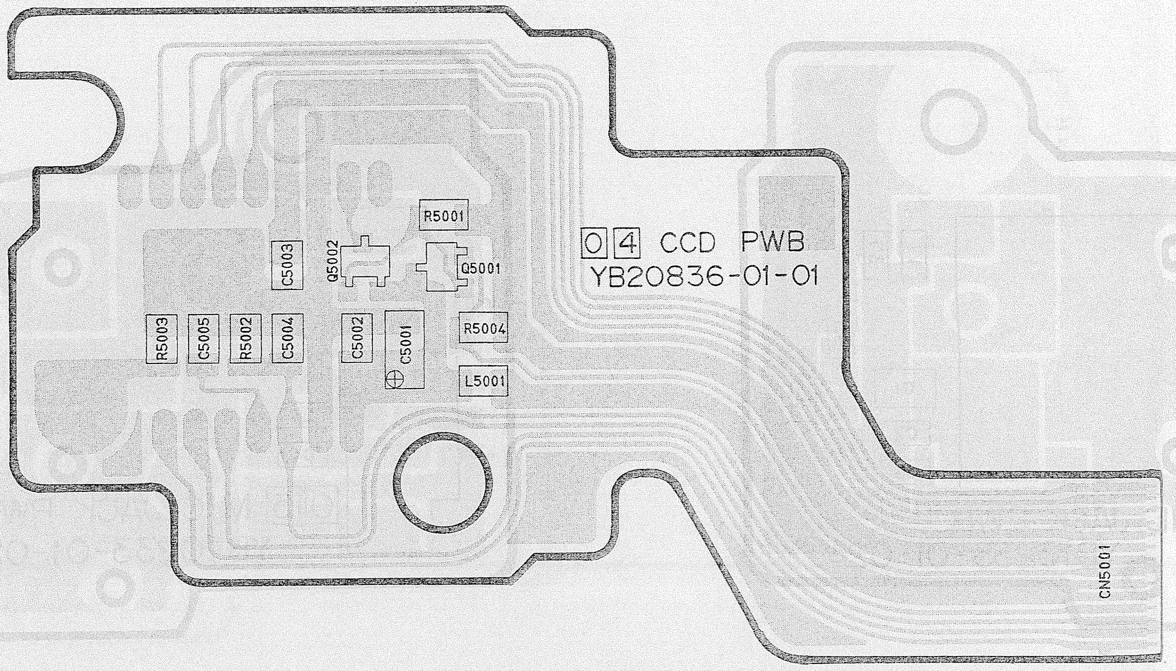
04 CCD
TO CDS/AGC
(Page4-23)
CN106
[9,10] CCD_12V
[12] RG
[13] H1
[14] H2
[11] SUB
L5001 0Ω
R5002
1M
C5005
0.1
C5004
2200p
14 H2
13 H1
12 RG
11 CSUB
10 SUB
9 GND
8 VDD
IC5001
1 V4
2 V3
3 V2
4 V1
5 VL
6 GND
7 VOUT
[1] V4
[2] V3
[3] V2
[4] V1
[5] CCD-6.5V
[8] CCD_OUT
[6,7] GND
D
G
S
R5007
0Ω
C5001
1.5/20
C5002
0.1
C5006
39P
R5004
4.7K
C5003
0.1
Q5002
2SK662/PQR/-X
R5003
0Ω

A	B	C	D

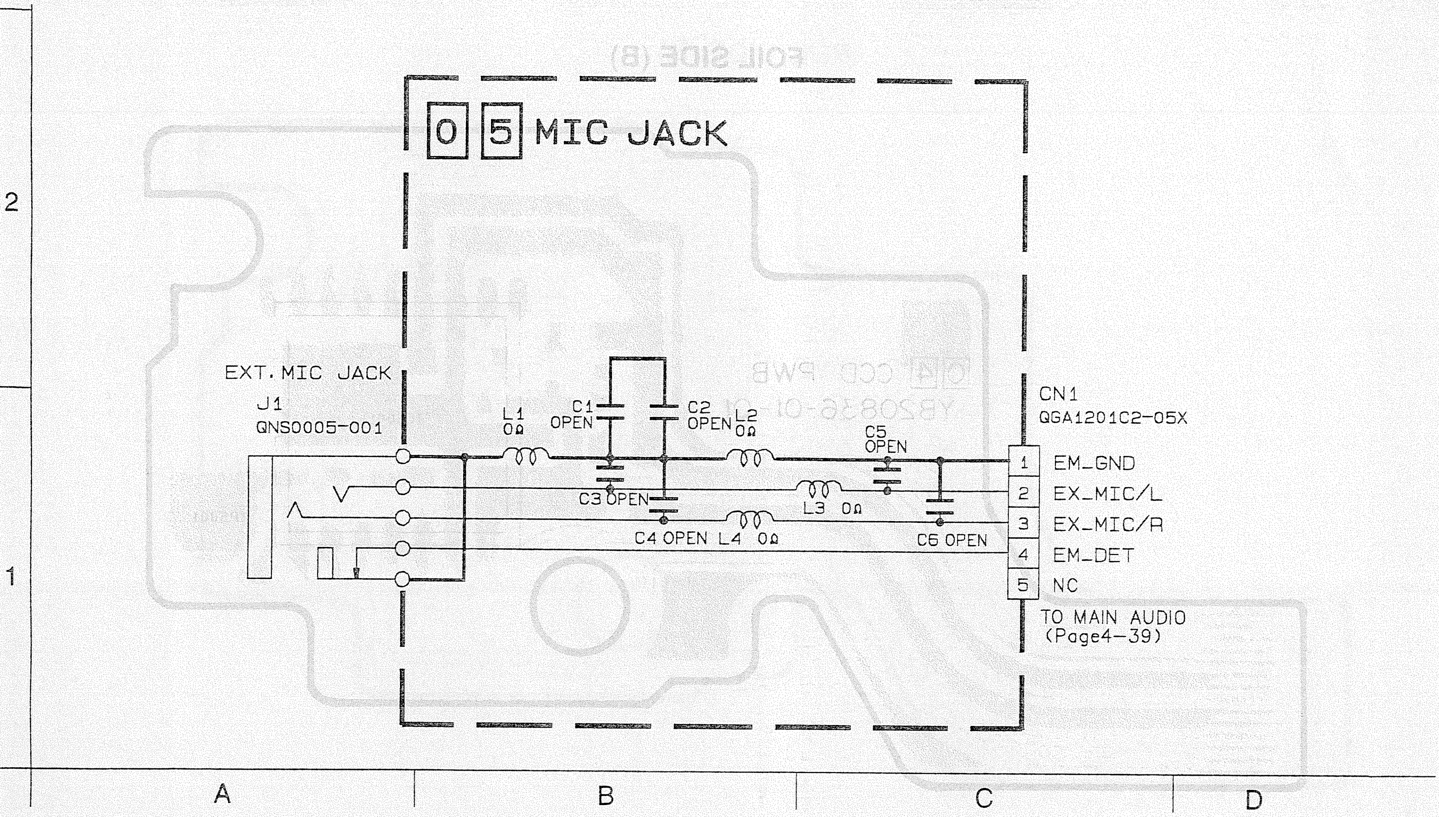
FOIL SIDE (B)


04 CCD PWB
YB20836-01-01
IC5001
TP5001

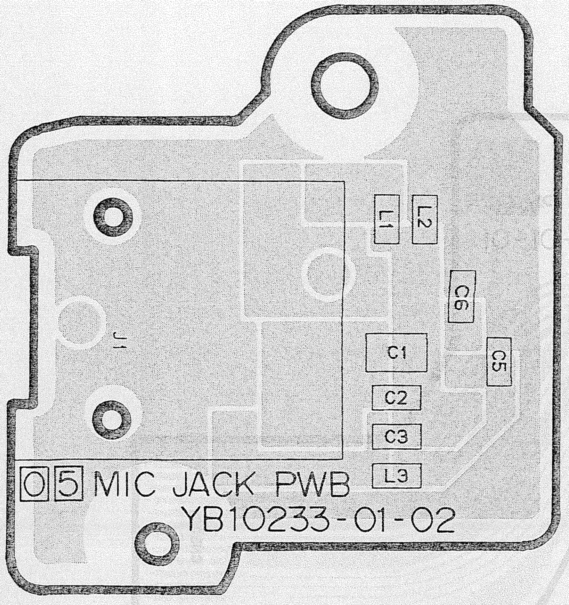
COMPONENT SIDE (A)


R5001
Q5002
Q5001
C5003
04 CCD PWB
YB20836-01-01
R5003
C5005
R5002
C5004
C5002
C5001
R5004
L5001
CN5001

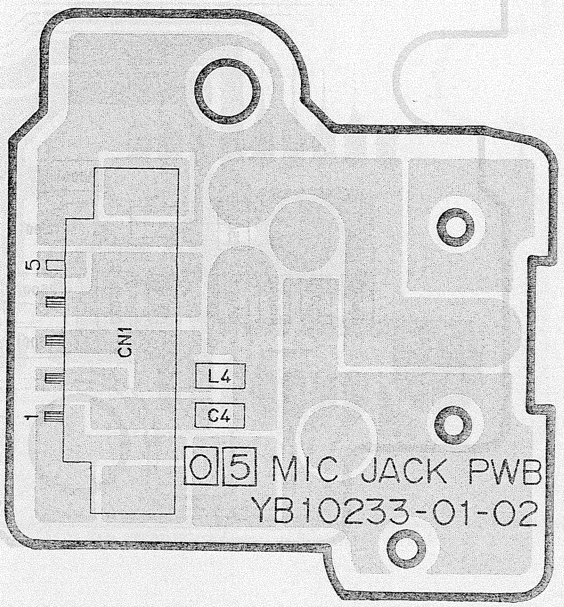
4.24 MIC JACK SCHEMATIC DIAGRAM AND MIC JACK CIRCUIT BOARD


05 MIC JACK
EXT. MIC JACK
J1
QNS0005-001
L1
0Ω
C1
OPEN
C2
OPEN
L2
0Ω
C5
OPEN
C3 OPEN
L3 0Ω
C4 OPEN
L4 0Ω
C6 OPEN
CN1
QGA1201C2-05X
1 EM_GND
2 EX_MIC/L
3 EX_MIC/R
4 EM_DET
5 NC
TO MAIN AUDIO
(Page4-39)
2
1
A
B
C
D

FOIL SIDE (B)

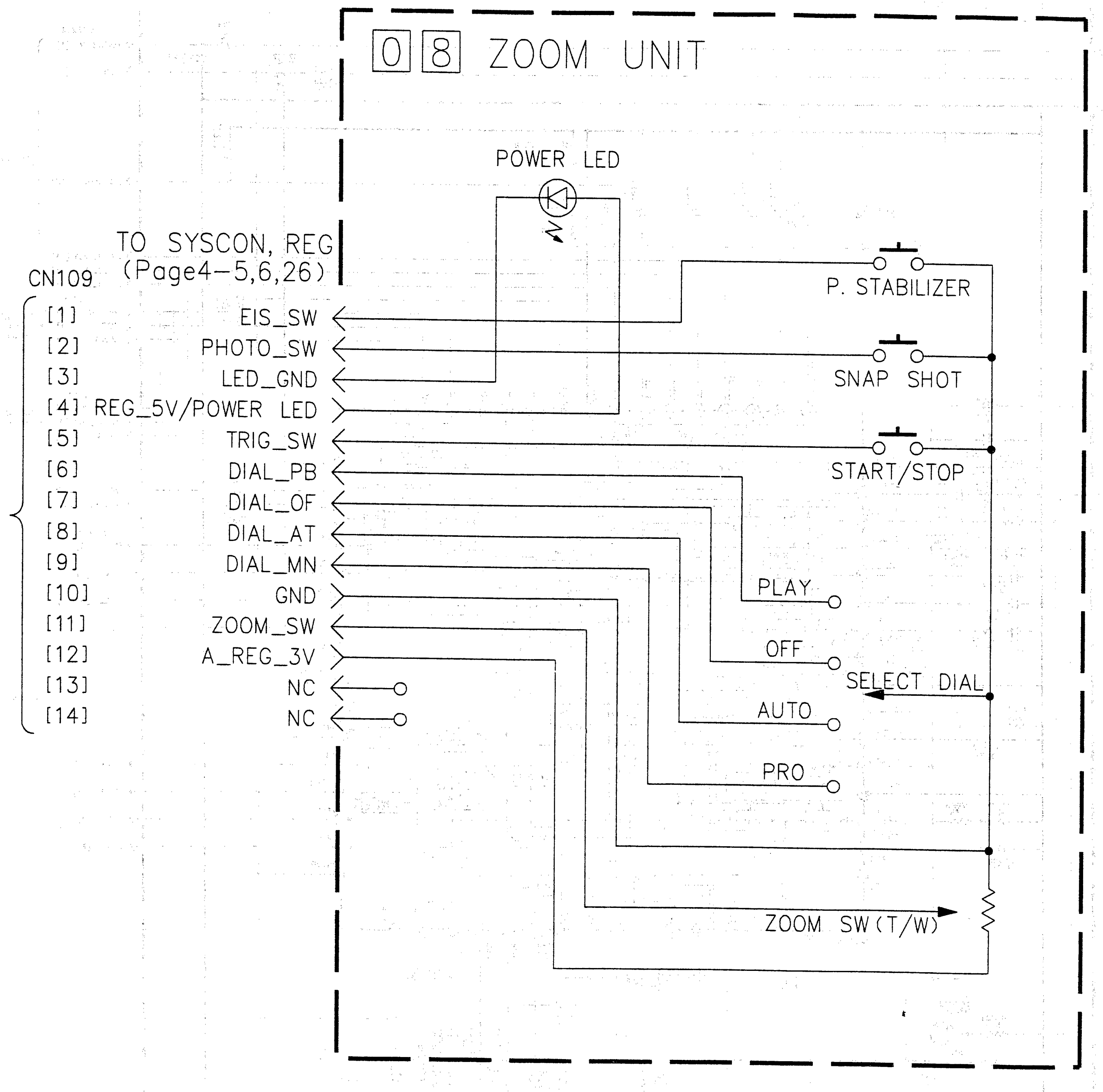

L1
L2
C6
J1
C1
C5
C2
C3
L3
05 MIC JACK PWB
YB10233-01-02

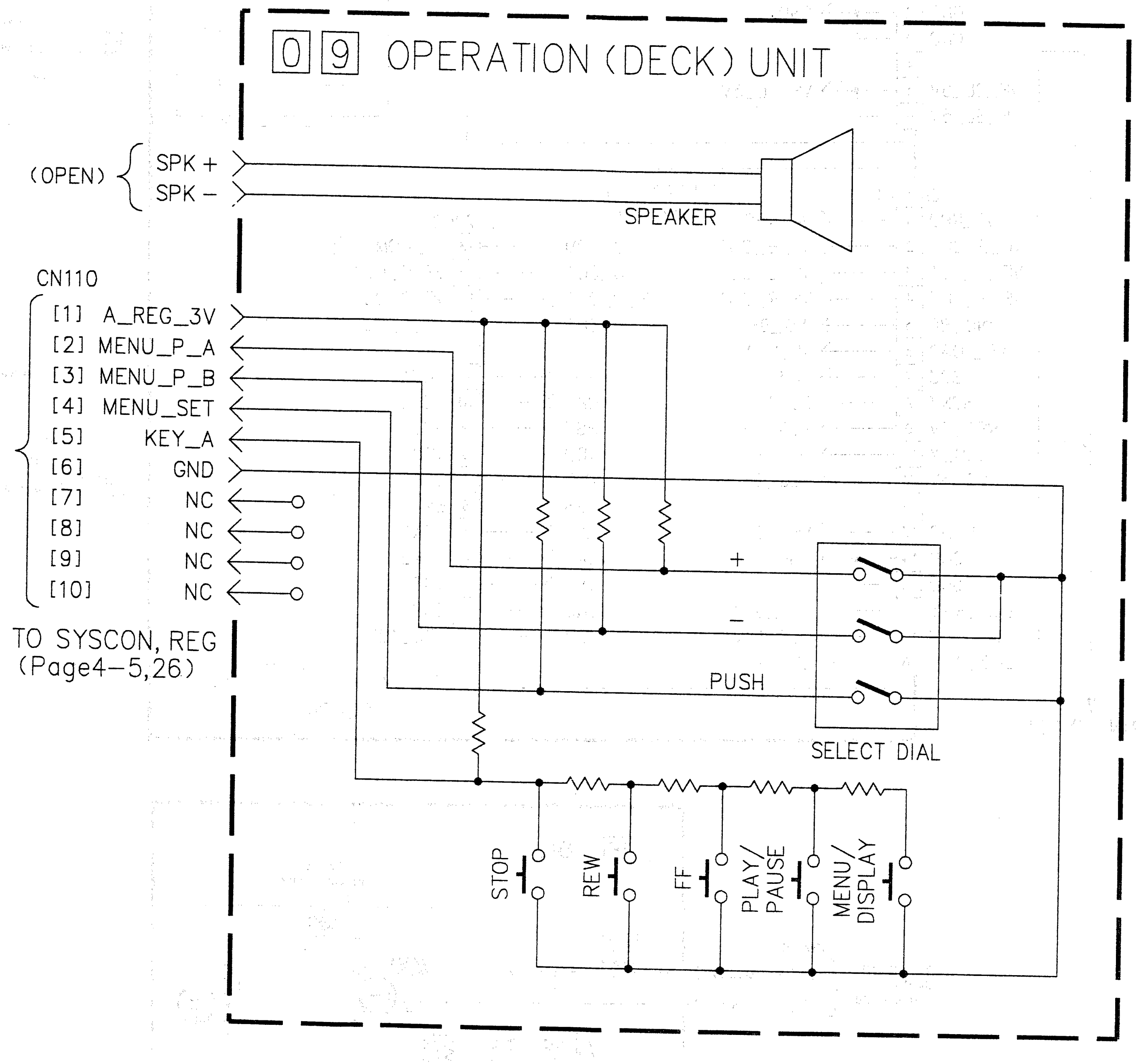
COMPONENT SIDE (A)


5
CN1
1
L4
C4
05 MIC JACK PWB
YB10233-01-02

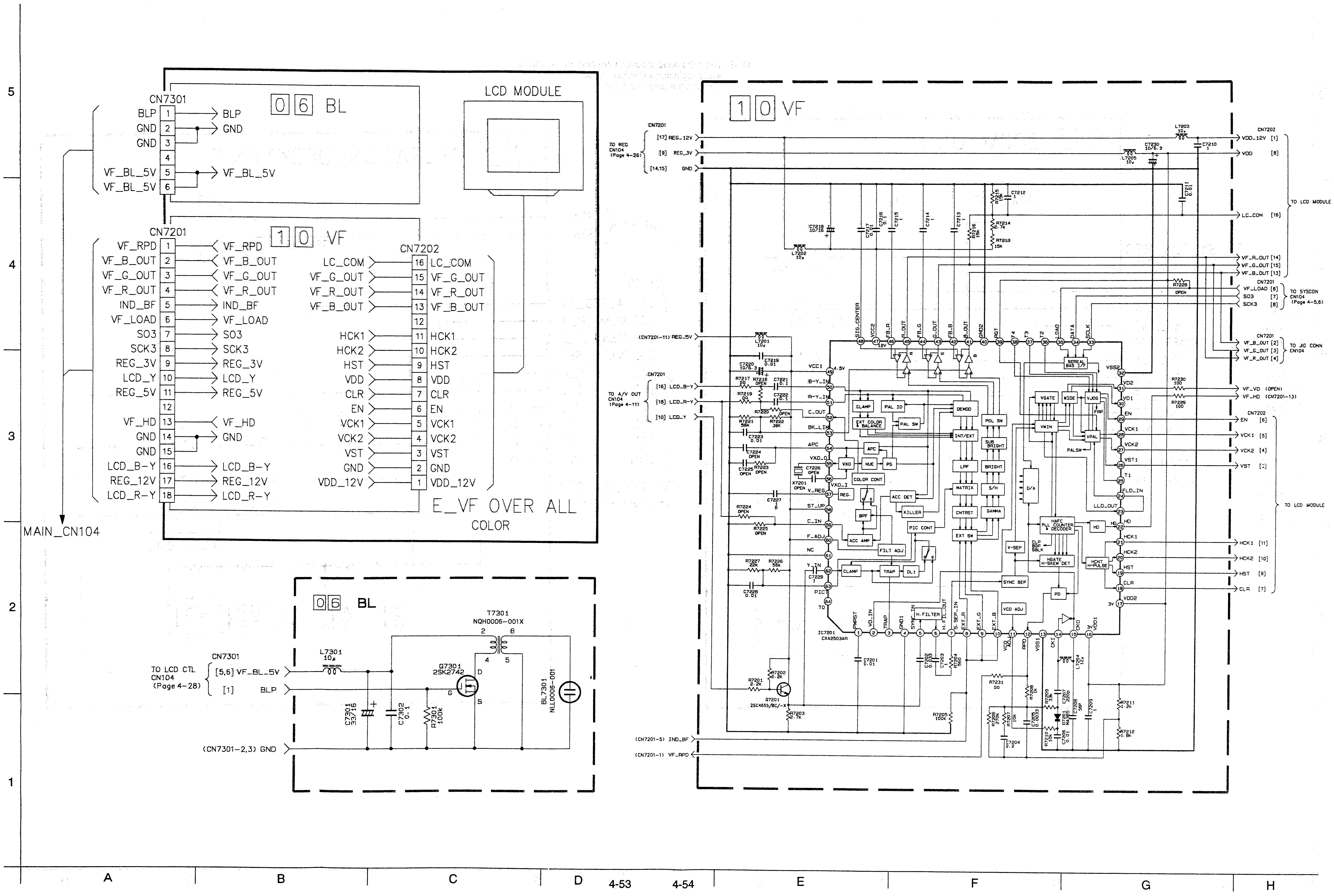
4.25 ZOOM UNIT AND OPERATION(DECK)UNIT SCHEMATIC DIAGRAMS

NOTE: The schematic diagrams are only for reference.
Avoid replacing individual parts.
Replace the entire unit only.


08 ZOOM UNIT
POWER LED
TO SYSCON, REG
(Page4–5,6,26)
CN109
[1] EIS_SW
[2] PHOTO_SW
[3] LED_GND
[4] REG_5V/POWER LED
[5] TRIG_SW
[6] DIAL_PB
[7] DIAL_OF
[8] DIAL_AT
[9] DIAL_MN
[10] GND
[11] ZOOM_SW
[12] A_REG_3V
[13] NC
[14] NC
P. STABILIZER
SNAP SHOT
START/STOP
PLAY
OFF
SELECT DIAL
AUTO
PRO
ZOOM SW(T/W)


09 OPERATION (DECK) UNIT
(OPEN)
SPK +
SPK –
SPEAKER
CN110
[1] A_REG_3V
[2] MENU_P_A
[3] MENU_P_B
[4] MENU_SET
[5] KEY_A
[6] GND
[7] NC
[8] NC
[9] NC
[10] NC
TO SYSCON, REG
(Page4–5,26)
+
–
PUSH
SELECT DIAL
STOP
REW
FF
PLAY/PAUSE
MENU/DISPLAY

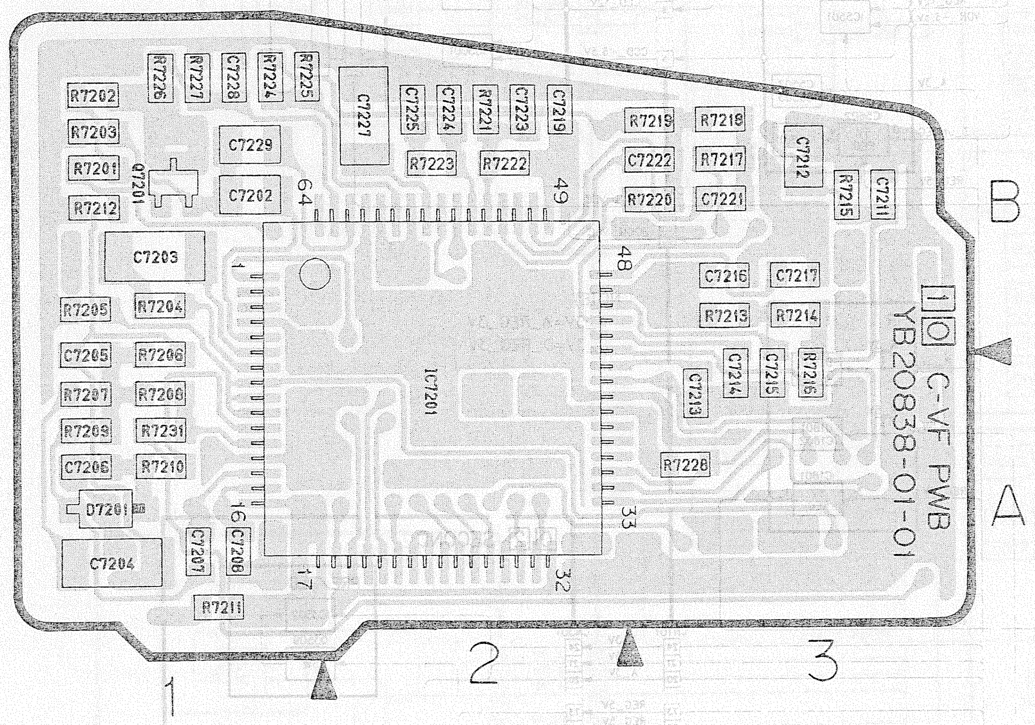
4.26 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM


CN7301
BLP
GND
GND
VF_BL_5V
VF_BL_5V
06 BL
LCD MODULE
CN7201
VF_RPD
VF_B_OUT
VF_G_OUT
VF_R_OUT
IND_BF
VF_LOAD
SO3
SCK3
REG_3V
LCD_Y
REG_5V
VF_HD
GND
GND
LCD_B-Y
REG_12V
LCD_R-Y
10 VF
CN7202
LC_COM
VF_G_OUT
VF_R_OUT
VF_B_OUT
HCK1
HCK2
HST
VDD
CLR
EN
VCK1
VCK2
VST
GND
VDD_12V
E_VF OVER ALL
COLOR
MAIN_CN104
T7301
NQH0006-001X
L7301
10μ
Q7301
2SK2742
C7301
33/16
C7302
0.1
R7301
100k
BL7301
NLL0006-001
TO LCD CTL
CN104
(Page 4-28)
[5,6] VF_BL_5V
[1] BLP
(CN7301-2,3) GND
TO REG
CN104
(Page 4-26)
[17] REG_12V
[9] REG_3V
[14,15] GND
(CN7201-11) REG_5V
TO A/V OUT
CN104
(Page 4-11)
[16] LCD_B-Y
[18] LCD_R-Y
[10] LCD_Y
(CN7201-5) IND_BF
(CN7201-1) VF_RPD
IC7201
CXA2503AR
Q7201
2SC4655/BC/-X
CN7202
VDD_12V [1]
VDD [8]
LC_COM [16]
VF_R_OUT [14]
VF_G_OUT [15]
VF_B_OUT [13]
TO LCD MODULE
CN7201
VF_LOAD [6]
SO3 [7]
SCK3 [8]
TO SYSCON
CN104
(Page 4-5,6)
CN7201
VF_B_OUT [2]
VF_G_OUT [3]
VF_R_OUT [4]
TO JIG CONN
CN104
VF_VD (OPEN)
VF_HD (CN7201-13)
CN7202
EN [6]
VCK1 [5]
VCK2 [4]
VST [3]
HCK1 [11]
HCK2 [10]
HST [9]
CLR [7]
TO LCD MODULE
SIG_CENTER
VCC2
FB_R
R_OUT
FB_G
G_OUT
FB_B
B_OUT
GND2
RGT
T4
T3
T2
LOAD
DATA
SCLK
VCC1
B-Y_IN
R-Y_IN
C_OUT
BK_LIM
APC
VXO_O
VXO_I
V_REG
ST_UP
C_IN
F_ADJ
NC
Y_IN
PIC
TO
VSS2
VD2
VD1
EN
VCK1
VCK2
VST1
T1
FLD_IN
LLD_OUT
HD
HCK1
HCK2
HST
CLR
VDD2
PWRST
VD_IN
TRAP
GND1
SYNC_IN
H.FIL_OUT
S.SEP_IN
EXT_R
EXT_G
EXT_B
VCO
RPD
VSS1
CKI
CKO
VDD1
CLAMP
PAL ID
DEMOD
EXT COLOR & BALANCE
PAL SW
INT/EXT
POL SW
SUB BRIGHT
APC
VXO
HUE
PS
COLOR CONT
LPF
BRIGHT
REG.
ACC DET
MATRIX
S/H
KILLER
CNTRST
GAMMA
BPF
PIC CONT
ACC AMP
FILT ADJ
EXT SW
CLAMP
TRAP
DL1
SYNC SEP
H.FILTER
VCO ADJ
PD
D/A
SEREAL BAS I/F
VGATE
WIDE
VJOG
VWIN
VPAL
PALSW
FRP
HAFC PLL COUNTER & DECODER
HD
V-SEP
HSATE H-SKEW DET
HCNT H-PULSE
L7202 10μ
L7201 10μ
L7203 10μ
L7205 10μ
L7204 12μ
C7218 10/16
C7217 0.01
C7216 0.1
C7215 1
C7214 1
C7213 1
C7212 1
C7211 0.01
C7210 1
C7230 10/6.3
C7219 0.01
C7220 10/6.3
C7221 0.1
C7222 0.1
C7223 0.01
C7224 OPEN
C7225 OPEN
C7226 OPEN
C7227 8
C7228 0.01
C7229 1
C7201 0.01
C7202 0.0033
C7203 1
C7204
C7205 0.0033
C7206 0.01
C7207 220p
C7208 56p
C7209 1
R7213 15k
R7214 2.7k
R7215 15k
R7216 15k
R7217 0Ω
R7218 OPEN
R7219 0Ω
R7220 OPEN
R7221 56k
R7222 39k
R7223 OPEN
R7224 OPEN
R7225 OPEN
R7226 56k
R7227 22k
R7228 OPEN
R7229 100
R7230 100
R7201 2.2k
R7202 2.2k
R7203 2.7k
R7204 560
R7205 100k
R7206 270k
R7207 10k
R7208 1k
R7209 1k
R7210 10k
R7211 1.2k
R7212 1.8k
R7231 0Ω
X7201 OPEN
D7201
4.5V
12V
3V
A
B
C
D
E
F
G
H
1
2
3
4
5

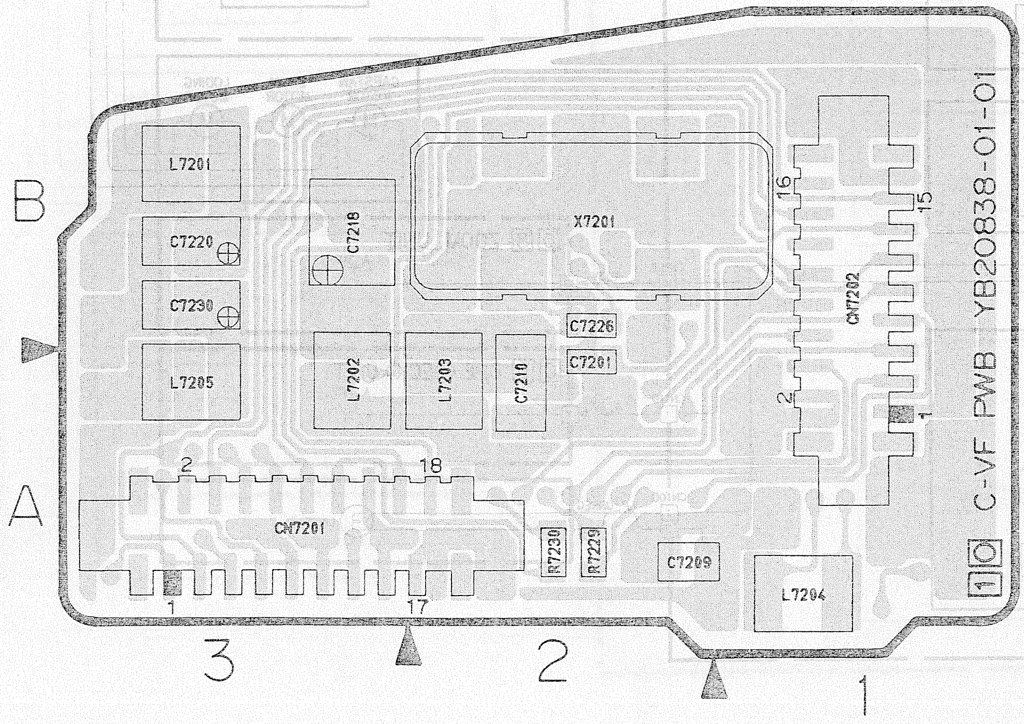
4.27 ELECTRONIC VIEWFINDER CIRCUIT BOARD

<VF>

FOIL SIDE (B)


R7202
R7203
R7201
R7212
R7226
R7227
C7228
R7224
R7225
C7227
C7229
C7202
Q7201
C7225
C7224
R7221
C7223
C7219
R7223
R7222
R7219
R7218
C7222
R7217
R7220
C7221
C7212
R7215
C7211
64
49
48
1
C7203
R7205
R7204
C7205
R7206
R7207
R7208
R7209
R7231
C7206
R7210
D7201
C7204
C7207
C7208
R7211
IC7201
C7216
C7217
R7213
R7214
C7213
C7214
C7215
R7216
R7228
16
17
32
33
1 0 C-VF PWB
YB20838-01-01
B
A
1
2
3

COMPONENT SIDE (A)


L7201
C7220
C7230
L7205
C7218
X7201
C7226
C7201
L7202
L7203
C7210
CN7202
16
15
2
1
2
18
CN7201
1
17
R7230
R7229
C7209
L7204
B
A
3
2
1
YB20838-01-01
C-VF PWB 1 0

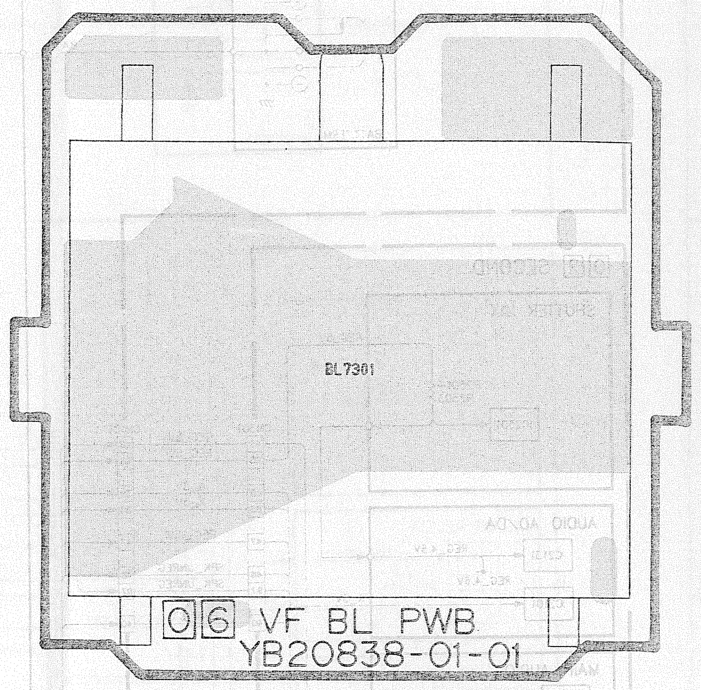
COMPONENT PARTS LOCATION GUIDE (VF)

REF.No.	LOCATION		
CAPACITOR			
C7201	A	C	2A
C7202	B	C	1B
C7203	B	C	1B
C7204	B	C	1A
C7205	B	C	1B
C7206	B	C	1A
C7207	B	C	1A
C7208	B	C	1A
C7209	A	C	2A
C7210	A	C	2A
C7211	B	C	3B
C7212	B	C	3B
C7213	B	C	3A
C7214	B	C	3A
C7215	B	C	3A
C7216	B	C	3B
C7217	B	C	3B
C7218	A	C	3B
C7219	B	C	2B
C7220	A	C	3B
C7221	B	C	3B
C7222	B	C	3B
C7223	B	C	2B
C7224	B	C	2B
C7225	B	C	2B
C7226	A	C	2B
C7227	B	C	2B
C7228	B	C	1B
C7229	B	C	1B
C7230	A	C	3B
CONNECTOR			
CN7201	A	C	3A
CN7202	A	C	1A
DIODE			
D7201	B	C	1A
IC			
IC7201	B	C	2A
COIL			
L7201	A	C	3B
L7202	A	C	3A
L7203	A	C	2A
L7204	A	C	1A
L7205	A	C	3A

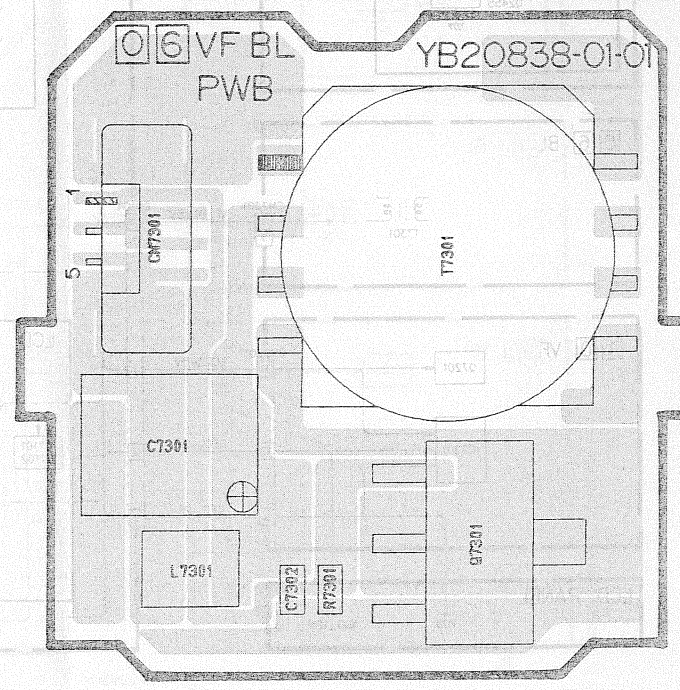
REF.No.	LOCATION		
TRANSISTOR			
Q7201	B	C	1B
RESISTOR			
R7201	B	C	1B
R7202	B	C	1B
R7203	B	C	1B
R7204	B	C	1B
R7205	B	C	1B
R7206	B	C	1B
R7207	B	C	1A
R7208	B	C	1A
R7209	B	C	1A
R7210	B	C	1A
R7211	B	C	1A
R7212	B	C	1B
R7213	B	C	3B
R7214	B	C	3B
R7215	B	C	3B
R7216	B	C	3A
R7217	B	C	3B
R7218	B	C	3B
R7219	B	C	3B
R7220	B	C	3B
R7221	B	C	2B
R7222	B	C	2B
R7223	B	C	2B
R7224	B	C	1B
R7225	B	C	1B
R7226	B	C	1B
R7227	B	C	1B
R7228	B	C	3A
R7229	A	C	2A
R7230	A	C	2A
R7231	B	C	1A
OTHER			
X7201	A	C	2B

<BL>

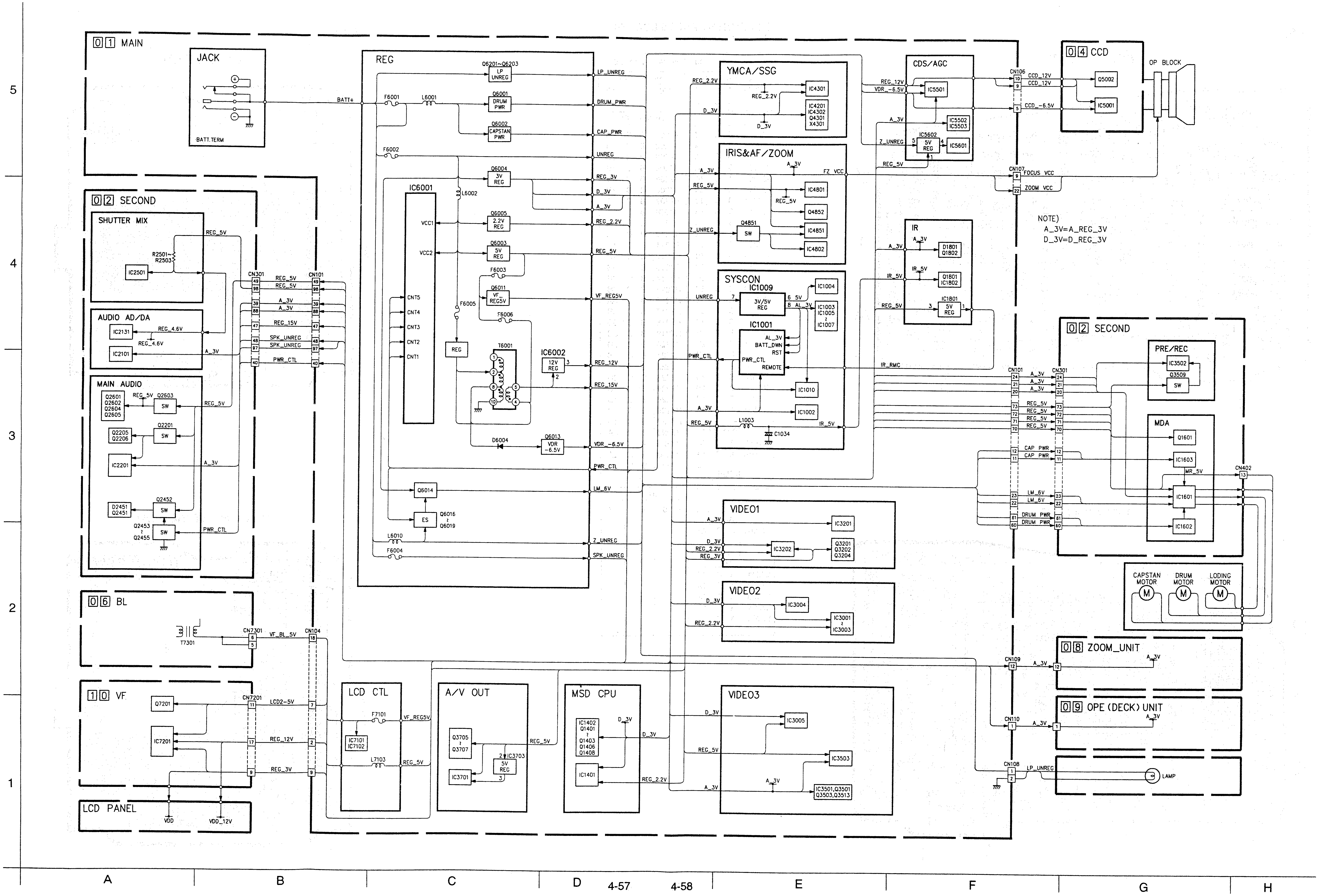
FOIL SIDE (B)


BL7301
0 6 VF BL PWB
YB20838-01-01

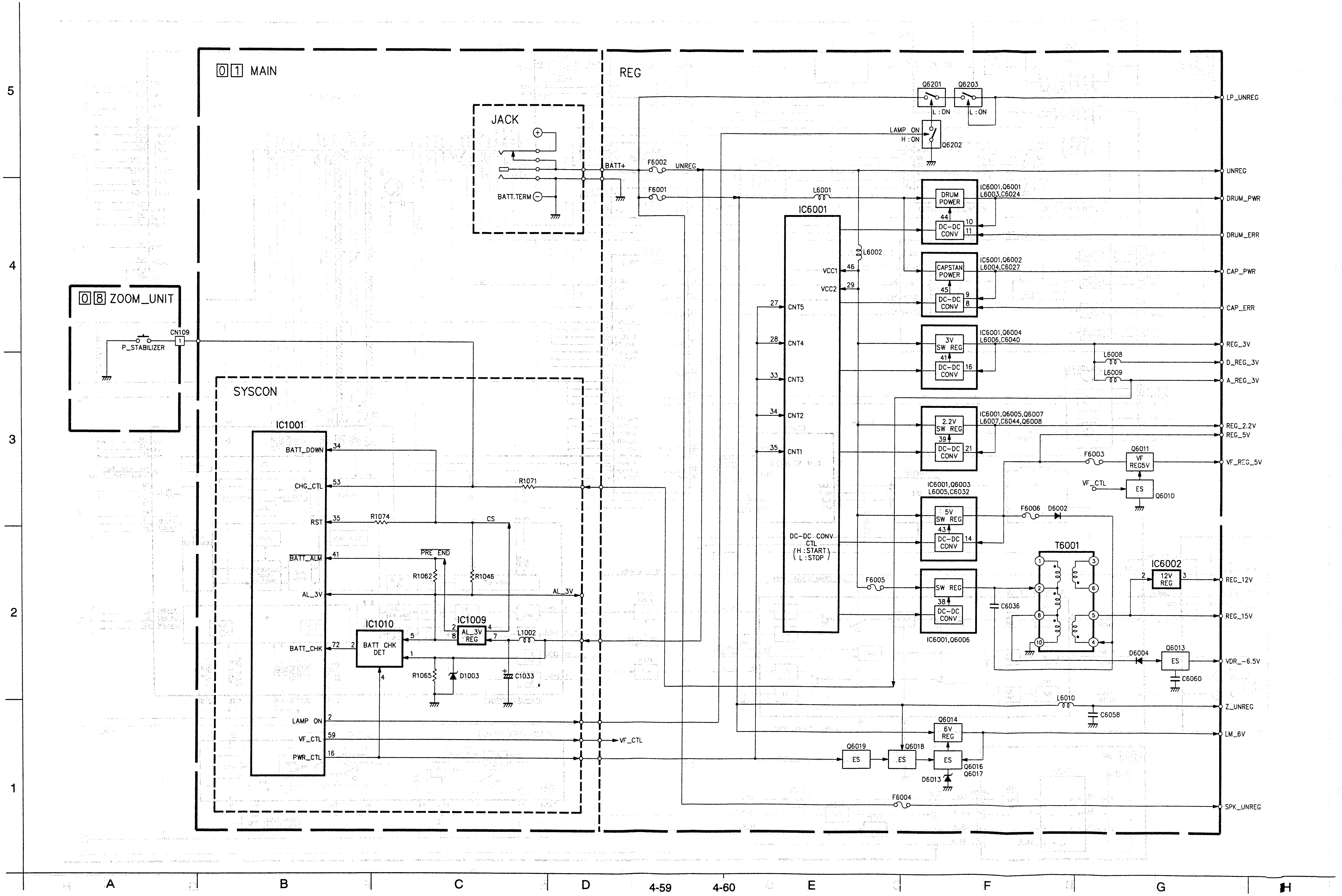
COMPONENT SIDE (A)


0 6 VF BL
PWB
YB20838-01-01
CN7301
1
5
T7301
C7301
L7301
C7302
R7301
Q7301

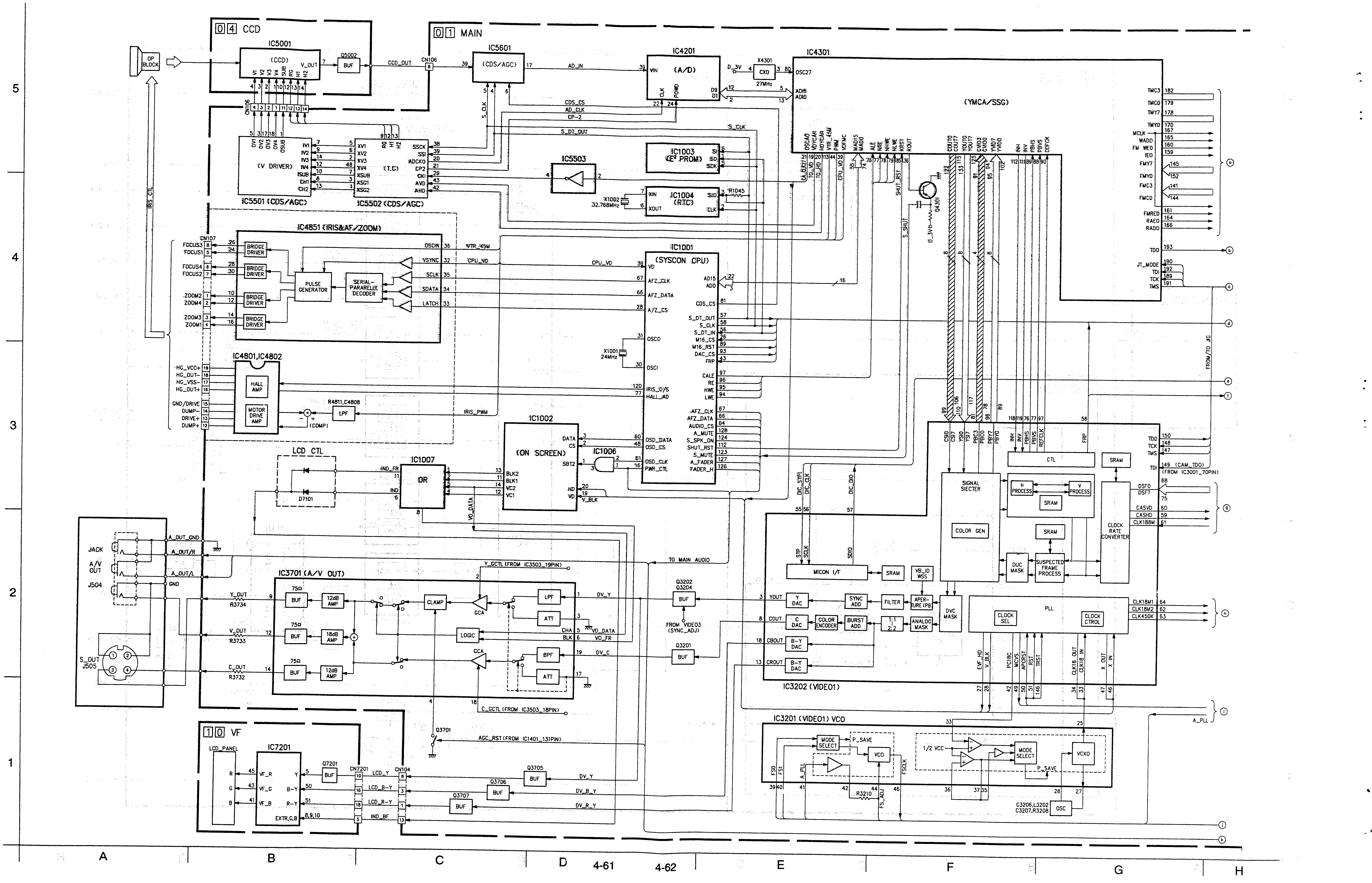
4.28 POWER SYSTEM BLOCK DIAGRAM

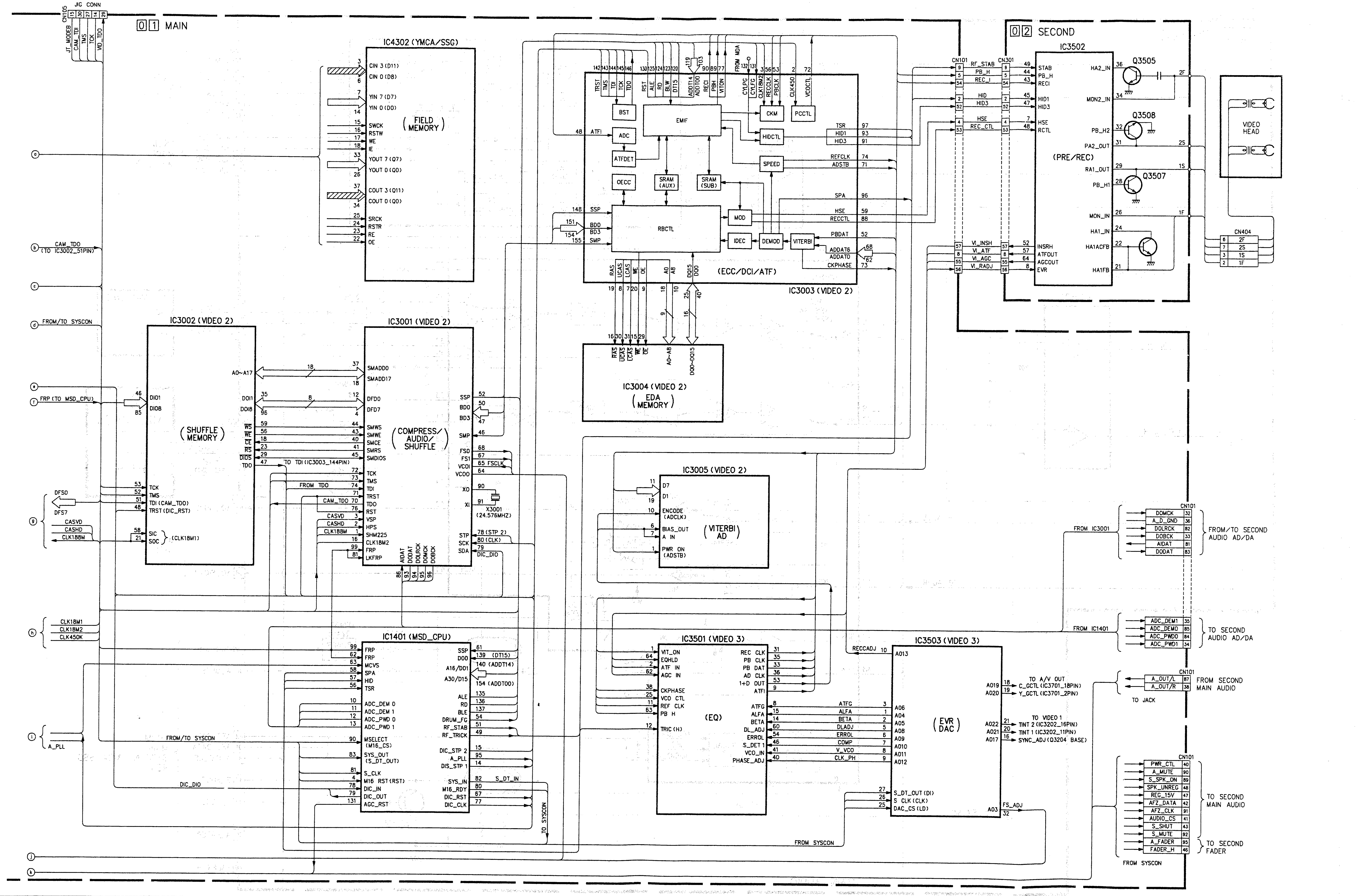

01 MAIN
JACK
BATT.TERM
BATT+
REG
Q6201~Q6203
LP UNREG
F6001
L6001
Q6001 DRUM PWR
Q6002 CAPSTAN PWR
F6002
LP_UNREG
DRUM_PWR
CAP_PWR
UNREG
Q6004 3V REG
REG_3V
D_3V
A_3V
IC6001
L6002
VCC1
Q6005 2.2V REG
REG_2.2V
VCC2
Q6003 5V REG
REG_5V
F6003
Q6011 VF_REG5V
VF_REG5V
F6005
F6006
CNT5
CNT4
CNT3
CNT2
CNT1
T6001
IC6002 12V REG
REG_12V
REG_15V
D6004
Q6013 VDR -6.5V
VDR_-6.5V
PWR_CTL
Q6014
LM_6V
ES
Q6016 ~ Q6019
L6010
F6004
Z_UNREG
SPK_UNREG
02 SECOND
SHUTTER MIX
R2501~R2503
IC2501
AUDIO AD/DA
IC2131
IC2101
REG_4.6V
MAIN AUDIO
Q2601 Q2602 Q2604 Q2605
Q2603
SW
Q2205 Q2206
Q2201
IC2201
D2451 Q2451
Q2452
Q2453 ~ Q2455
CN301
CN101
REG_15V
SPK_UNREG
PWR_CTL
06 BL
T7301
CN7301
VF_BL_5V
CN104
10 VF
Q7201
IC7201
CN7201
LCD2-5V
REG_12V
REG_3V
LCD PANEL
VDD
VDD_12V
LCD CTL
F7101
IC7101 IC7102
L7103
A/V OUT
Q3705 ~ Q3707
IC3701
IC3703 5V REG
MSD CPU
IC1402 Q1401 ~ Q1403 Q1406 Q1408
IC1401
YMCA/SSG
IC4301
IC4201 IC4302 Q4301 X4301
IRIS&AF/ZOOM
FZ_VCC
IC4801
Q4852
Q4851 SW
IC4851
IC4802
SYSCON
IC1009 3V/5V REG
IC1004
IC1003 IC1005 ~ IC1007
IC1001
AL_3V
BATT_DWN
RST
REMOTE
IC1010
IC1002
L1003
C1034
IR_5V
IR_RMC
VIDEO1
IC3201
IC3202
Q3201 Q3202 Q3204
VIDEO2
IC3004
IC3001 ~ IC3003
VIDEO3
IC3005
IC3503
IC3501,Q3501 Q3503,Q3513
CDS/AGC
REG_12V
VDR_-6.5V
IC5501
IC5502 IC5503
IC5602 5V REG
IC5601
IR
D1801 Q1802
IR_5V
Q1801 IC1802
IC1801 5V REG
CN106
CCD_12V
CCD_-6.5V
CN107
FOCUS_VCC
ZOOM_VCC
04 CCD
Q5002
IC5001
OP BLOCK
NOTE)
A_3V=A_REG_3V
D_3V=D_REG_3V
02 SECOND
PRE/REC
IC3502
Q3509
MDA
Q1601
IC1603
MR_5V
IC1601
IC1602
CN402
CAP_PWR
LM_6V
DRUM_PWR
CAPSTAN MOTOR
DRUM MOTOR
LODING MOTOR
M
08 ZOOM_UNIT
CN109
09 OPE (DECK) UNIT
CN110
CN108
LAMP
1
2
3
4
5
A
B
C
D
E
F
G
H

4.29 REGULATOR SYSTEM SCHEMATIC DIAGRAM

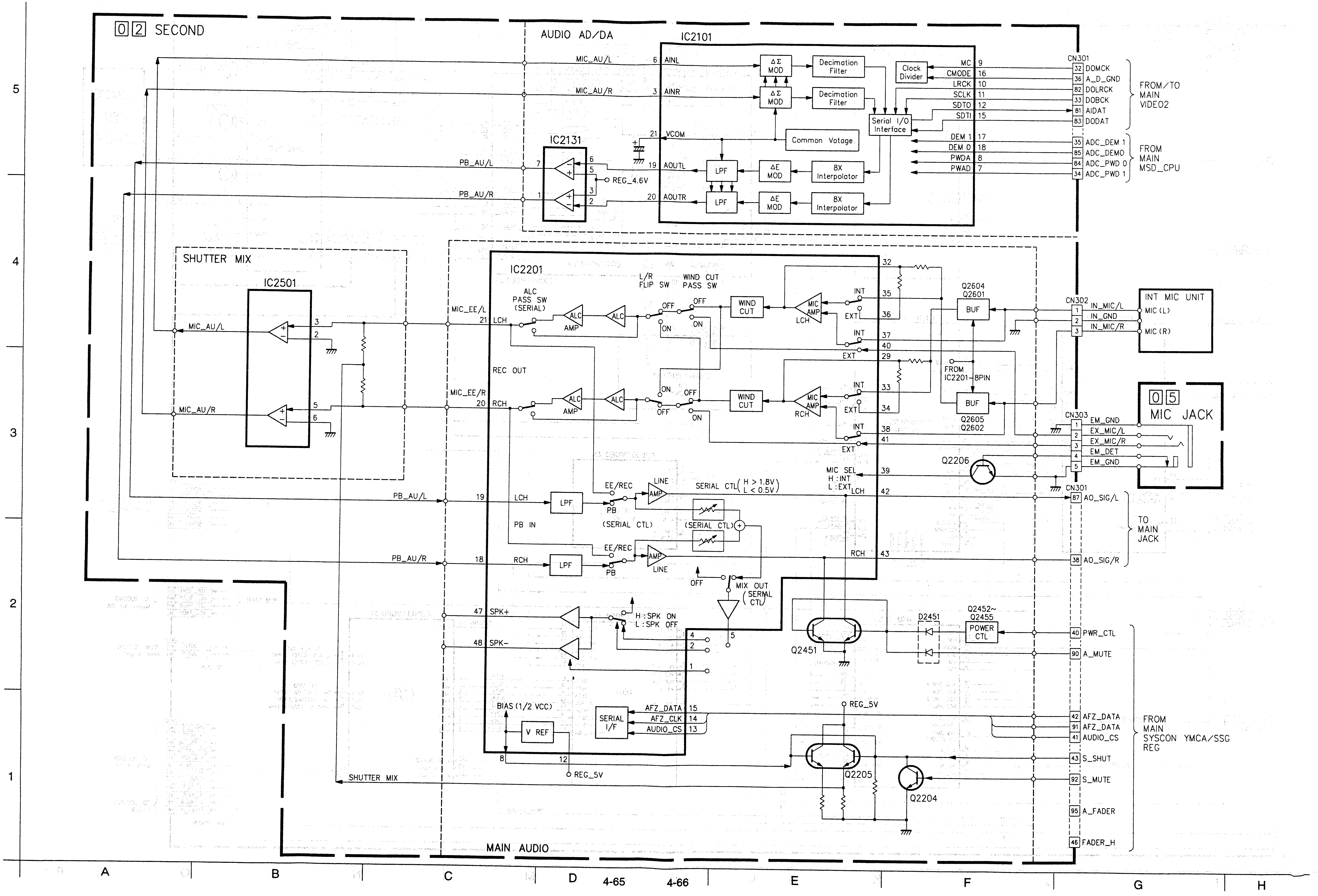

01 MAIN
REG
JACK
BATT.TERM
BATT+
F6002
UNREG
F6001
L6001
IC6001
L6002
VCC1
VCC2
46
29
27 CNT5
28 CNT4
33 CNT3
34 CNT2
35 CNT1
DC-DC CONV CTL (H : START / L : STOP)
Q6201
Q6203
L : ON
L : ON
LAMP ON
H : ON
Q6202
DRUM POWER
DC-DC CONV
44
10
11
IC6001,Q6001
L6003,C6024
CAPSTAN POWER
45
9
8
IC6001,Q6002
L6004,C6027
3V SW REG
41
16
IC6001,Q6004
L6006,C6040
L6008
L6009
2.2V SW REG
39
21
IC6001,Q6005,Q6007
L6007,C6044,Q6008
F6003
Q6011
VF REG5V
VF_CTL
ES
Q6010
IC6001,Q6003
L6005,C6032
5V SW REG
43
14
F6006
D6002
T6001
F6005
SW REG
38
C6036
IC6001,Q6006
IC6002
12V REG
2
3
D6004
Q6013
C6060
L6010
C6058
Q6014
6V REG
Q6019
Q6018
Q6016
Q6017
D6013
F6004
LP_UNREG
UNREG
DRUM_PWR
DRUM_ERR
CAP_PWR
CAP_ERR
REG_3V
D_REG_3V
A_REG_3V
REG_2.2V
REG_5V
VF_REG_5V
REG_12V
REG_15V
VDR_-6.5V
Z_UNREG
LM_6V
SPK_UNREG
08 ZOOM_UNIT
P_STABILIZER
CN109
1
SYSCON
IC1001
BATT_DOWN 34
CHG_CTL 53
RST 35
BATT_ALM 41
AL_3V
BATT_CHK 72
LAMP ON 2
VF_CTL 59
PWR_CTL 16
R1071
R1074
CS
PRE END
R1062
R1046
AL_3V
IC1009
AL_3V REG
2
8
4
7
IC1010
BATT CHK DET
2
5
1
4
L1002
R1065
D1003
C1033
VF_CTL
1
2
3
4
5
6
8
10
5
4
3
2
1
A
B
C
D
E
F
G
H

4.30 VIDEO SYSTEM BLOCK DIAGRAM


04 CCD
01 MAIN
10 VF
OP BLOCK
IC5001
(CCD)
V_OUT
Q5002
BUF
CCD_OUT
CN106
IC5601
(CDS/AGC)
AD_IN
IC4201
(A/D)
X4301
CXO
27MHz
D_3V
IC4301
(YMCA/SSG)
OSC27
ADIB
ADIO
CDS_CS
AD_CLK
CP-2
S_DT_OUT
S_CLK
S_SHUT
IC5501 (CDS/AGC)
(V DRIVER)
IC5502 (CDS/AGC)
(T.G)
IC5503
IC1003
(E² PROM)
IC1004
(RTC)
X1002
32.768MHz
R1045
Q4301
D_3V
IRIS_CTL
IC4851 (IRIS&AF/ZOOM)
CN107
FOCUS3
FOCUS1
FOCUS4
FOCUS2
ZOOM2
ZOOM4
ZOOM3
ZOOM1
BRIDGE DRIVER
PULSE GENERATOR
SERIAL-PARARELLE DECODER
OSCIN
VSYNC
SCLK
SDATA
LATCH
WTR_45M
CPU_VD
IC1001
(SYSCON CPU)
X1001
24MHz
AFZ_CLK
AFZ_DATA
A/Z_CS
OSCO
OSCI
IRIS_O/S
HALL_AD
OSD_DATA
OSD_CS
OSD_CLK
PWR_CTL
CDS_CS
S_DT_OUT
S_CLK
S_DT_IN
M16_CS
M16_RST
DAC_CS
FRP
CALE
RE
HWE
LWE
AFZ_CLK
AFZ_DATA
AUDIO_CS
A_MUTE
S_SPK_ON
SHUT_RST
S_MUTE
A_FADER
FADER_H
IC4801, IC4802
HG_VCC+
HG_OUT-
HG_VSS-
HG_OUT+
GND/DRIVE
DUMP-
DRIVE+
DUMP+
HALL AMP
MOTOR DRIVE AMP
R4811, C4808
LPF
(COMP)
IRIS_PWM
IC1002
(ON SCREEN)
IC1006
LCD CTL
D7101
IC1007
OR
IND_FR
IND
VD_DATA
V_BLK
TMC3
TMC0
TMY7
TMY0
MCLK
WADO
FM WEO
IEO
FMY7
FMY0
FMC3
FMC0
FMRED
RAEO
RADO
TDO
JT_MODE
TDI
TCK
TMS
FROM/TO JIG
IC3202 (VIDEO1)
SIGNAL SIECTER
COLOR GEN
H PROCESS
V PROCESS
SRAM
CTL
CLOCK RATE CONVERTER
DUC MASK
SUSPECTED FRAME PROCESS
MICON I/F
VB_ID WSS
Y DAC
C DAC
B-Y DAC
SYNC ADD
COLOR ENCODER
BURST ADD
FILTER
APER-TURE (PB)
ANALOG MASK
DVC MASK
PLL
CLOCK SEL
CLOCK CTROL
CLK18M1
CLK18M2
CLK450K
DSF0
DSF7
CASVD
CASHD
CLK18BM
(CAM_TDO)
(FROM IC3001_70PIN)
YOUT
COUT
CBOUT
CROUT
EVF_HD
V_BLK
PC18C
MCVS
APCRST
RST
TRST
CLK18 OUT
CLK18 IN
X OUT
X IN
TO MAIN AUDIO
Q3202
Q3204
FROM VIDEO3 (SYNC_ADJ)
Q3201
IC3201 (VIDEO1) VCO
MODE SELECT
P_SAVE
VCO
1/2 VCC
VCXO
OSC
R3210
FS_ADJ
FSCLK
A_PLL
C3206, L3202
C3207, R3208
JACK
A/V OUT
J504
A_OUT_GND
A_OUT/R
A_OUT/L
GND
S_OUT
J505
Y_OUT
R3734
V_OUT
R3733
C_OUT
R3732
IC3701 (A/V OUT)
75Ω
BUF
12dB AMP
18dB AMP
CLAMP
GCA
LPF
ATT
BPF
LOGIC
Y_GCTL (FROM IC3503_19PIN)
C_GCTL (FROM IC3503_18PIN)
DV_Y
DV_C
CHA
BLK
VD_DATA
VD_FR
Q3701
AGC_RST (FROM IC1401_131PIN)
IC7201
LCD_PANEL
VF_R
VF_G
VF_B
EXTR, C, B
Q7201
CN7201
CN104
LCD_Y
LCD_B-Y
LCD_R-Y
IND_BF
Q3705
Q3706
Q3707
DV_B_Y
DV_R_Y
A
B
C
D
E
F
G
H
1
2
3
4
5


01 MAIN
02 SECOND
CN105 JIG CONN
JT_MODEB
CAM_TDI
TMS
TCK
VID_TDO
IC4302 (YMCA/SSG)
(FIELD MEMORY)
CIN 3 (D11)
CIN 0 (D8)
YIN 7 (D7)
YIN 0 (D0)
SWCK
RSTW
WE
IE
YOUT 7 (Q7)
YOUT 0 (Q0)
COUT 3 (Q11)
COUT 0 (Q0)
SRCK
RSTR
RE
OE
IC3003 (VIDEO 2)
(ECC/DCI/ATF)
BST
EMIF
CKM
PCCTL
ADC
ATFDET
HIDCTL
SPEED
OECC
SRAM (AUX)
SRAM (SUB)
RBCTL
MOD
IDEC
DEMOD
VITERBI
TSR
HID1
HID3
REFCLK
ADSTB
SPA
HSE
RECCTL
PBDAT
ADDAT6
ADDAT0
CKPHASE
ATFI
SSP
BDD
BD3
SMP
IC3004 (VIDEO 2)
(EDA MEMORY)
RAS
UCAS
LCAS
WE
OE
A0~A8
DQ0~DQ15
IC3002 (VIDEO 2)
(SHUFFLE MEMORY)
A0~A17
DIO1
DIO8
TCK
TMS
TDI (CAM_TDO)
TRST (DIC_RST)
SIC
SOC
(CLK18M1)
TO TDI (IC3003_144PIN)
IC3001 (VIDEO 2)
(COMPRESS/ AUDIO/ SHUFFLE)
SMADD0
SMADD17
DFD0
DFD7
SMWS
SMWE
SMCE
SMRS
SMDIOS
FROM TDO
CAM_TDO
CASVD
CASHD
CLK18BM
SHM225
CLK18M2
FRP
LKFRP
AIDAT
DODAT
DOLRCK
DOMCK
DOBCK
SSP
BDD
BD3
SMP
FS0
FS1
VCOI
VCOO
XO
XI
65 FSCLK
X3001 (24.576MHZ)
STP
SCK
SDA
78 (STP 2)
80 (CLK)
DIC_DIO
IC3005 (VIDEO 2)
(VITERBI AD)
D7
D1
ENCODE (ADCLK)
BIAS_OUT
A IN
PWR ON (ADSTB)
IC1401 (MSD_CPU)
FRP
MCVS
SPA
HID
TSR
ADC_DEM 0
ADC_DEM 1
ADC_PWD 0
ADC_PWD 1
MSELECT (M16_CS)
SYS_OUT (S_DT_OUT)
S_CLK
M16 RST (RST)
DIC_IN
DIC_OUT
AGC_RST
SSP
DOO
A16/DD1
A30/D15
139 (DT15)
140 (ADDT14)
154 (ADDT00)
ALE
RD
BLE
DRUM_FG
RF_STAB
RF_TRICK
DIC_STP 2
A_PLL
DIS_STP 1
SYS_IN
M16_RDY
DIC_RST
DIC_CLK
S_DT_IN
TO SYSCON
IC3501 (VIDEO 3)
(EQ)
VIT_ON
EQHLD
ATF IN
AGC IN
CKPHASE
VCO CTL
REF CLK
PB H
TRIC (H)
REC CLK
PB CLK
PB DAT
AD CLK
1+D OUT
ATFI
ATFG
ALFA
BETA
DL_ADJ
ERROL
S_DET 1
VCO_IN
PHASE_ADJ
IC3503 (VIDEO 3)
(EVR DAC)
RECCADJ
A013
A06
A04
A05
A08
A09
A010
A011
A012
DLADJ
COMP
V_VCO
CLK_PH
S_DT_OUT (DI)
S CLK (CLK)
DAC_CS (LD)
A019
A020
TO A/V OUT
C_GCTL (IC3701_18PIN)
Y_GCTL (IC3701_2PIN)
A022
A021
A017
TO VIDEO 1
TINT 2 (IC3202_16PIN)
TINT 1 (IC3202_11PIN)
SYNC_ADJ (Q3204 BASE)
A03
FS_ADJ
FROM SYSCON
CN101
CN301
IC3502
(PRE/REC)
RF_STAB
PB_H
REC_I
HID
HID3
HSE
REC_CTL
STAB
PB_H
RECI
HID1
HID3
HSE
RCTL
VI_INSH
VI_ATF
VI_AGC
VI_RADJ
INSRH
ATFOUT
AGCOUT
EVR
HA2_IN
MON2_IN
PB_H2
PA2_OUT
RA1_OUT
PB_H1
MON_IN
HA1_IN
HA1ACFB
HA1FB
Q3505
Q3508
Q3507
VIDEO HEAD
CN404
2F
2S
1S
1F
FROM IC3001
DOMCK
A_D_GND
DOLRCK
DOBCK
AIDAT
DODAT
FROM/TO SECOND AUDIO AD/DA
FROM IC1401
ADC_DEM1
ADC_DEMO
ADC_PWDO
ADC_PWD1
TO SECOND AUDIO AD/DA
A_OUT/L
A_OUT/R
FROM SECOND MAIN AUDIO
TO JACK
PWR_CTL
A_MUTE
S_SPK_ON
SPK_UNREG
REG_15V
AFZ_DATA
AFZ_CLK
AUDIO_CS
S_SHUT
S_MUTE
A_FADER
FADER_H
TO SECOND MAIN AUDIO
TO SECOND FADER
FROM SYSCON
CAM_TDO (TO IC3002_51PIN)
FROM/TO SYSCON
FRP (TO MSD_CPU)
DFS0
DFS7
CASVD
CASHD
CLK18BM
CLK18M1
CLK18M2
CLK450K
A_PLL
FROM/TO SYSCON
DIC_DIO
a
b
c
d
e
f
g
h
i
j
k

4.31 AUDIO SYSTEM BLOCK DIAGRAM



02 SECOND
AUDIO AD/DA
IC2101
MIC_AU/L
MIC_AU/R
6 AINL
3 AINR
21 VCOM
19 AOUTL
20 AOUTR
ΔΣ MOD
Decimation Filter
Clock Divider
Serial I/O Interface
Common Votage
LPF
ΔΣ MOD
8X Interpolator
MC 9
CMODE 16
LRCK 10
SCLK 11
SDTO 12
SDTI 15
DEM 1 17
DEM 0 18
PWDA 8
PWAD 7
CN301
32 DOMCK
36 A_D_GND
82 DOLRCK
33 DOBCK
81 AIDAT
83 DODAT
FROM/TO MAIN VIDEO2
35 ADC_DEM 1
85 ADC_DEMO
84 ADC_PWD 0
34 ADC_PWD 1
FROM MAIN MSD_CPU
IC2131
PB_AU/L
PB_AU/R
REG_4.6V
SHUTTER MIX
IC2501
MIC_AU/L
MIC_AU/R
IC2201
MIC_EE/L
MIC_EE/R
21 LCH
20 RCH
ALC PASS SW (SERIAL)
ALC AMP
L/R FLIP SW
WIND CUT PASS SW
OFF
ON
WIND CUT
MIC AMP
LCH
RCH
INT
EXT
REC OUT
32
35
36
37
40
29
33
34
38
41
39
42
43
Q2604 Q2601
BUF
FROM IC2201-8PIN
Q2605 Q2602
CN302
1 IN_MIC/L
2 IN_GND
3 IN_MIC/R
INT MIC UNIT
MIC (L)
MIC (R)
05 MIC JACK
CN303
1 EM_GND
2 EX_MIC/L
3 EX_MIC/R
4 EM_DET
5 EM_GND
Q2206
MIC SEL H :INT L :EXT
19 LCH
18 RCH
LPF
PB IN
EE/REC
PB
LINE AMP
SERIAL CTL(H > 1.8V L < 0.5V)
(SERIAL CTL)
MIX OUT (SERIAL CTL)
CN301
87 AO_SIG/L
38 AO_SIG/R
TO MAIN JACK
47 SPK+
48 SPK-
H :SPK ON
L :SPK OFF
4
2
1
5
Q2451
D2451
Q2452~ Q2455
POWER CTL
40 PWR_CTL
90 A_MUTE
BIAS (1/2 VCC)
V REF
SERIAL I/F
AFZ_DATA 15
AFZ_CLK 14
AUDIO_CS 13
8
12
REG_5V
Q2205
Q2204
42 AFZ_DATA
91 AFZ_DATA
41 AUDIO_CS
43 S_SHUT
92 S_MUTE
95 A_FADER
46 FADER_H
FROM MAIN SYSCON YMCA/SSG REG
SHUTTER MIX
MAIN AUDIO
5
4
3
2
1
A
B
C
D
E
F
G
H

4.32 VOLTAGE CHARTS

<SYSCON>

MODE PIN NO.	REC	PLAY
IC1001		
1	3.0	3.0
2	0	0
3	0	0
4	2.8	2.8
5	2.9	3.0
6	0.8	0
7	2.9	3.0
8	0	0
9	0.7	0
10	0	0
11	0.9	2.8
12	1.4	0
13	0.8	0
14	1.4	0
15	0	0
16	3.0	3.0
17	0	0
18	0	0
19	0	0
20	3.0	3.0
21	3.0	3.0
22	3.0	3.0
23	0	0
24	0	0
25	3.0	3.0
26	1.8	1.8
27	1.5	1.5
28	0	0
29	3.0	3.0
30	0	0
31	1.4	1.4
32	0	0
33	1.3	1.4
34	3.0	3.0
35	3.0	3.0
36	2.9	2.8
37	0	0
38	3.0	3.0
39	0	0
40	0	0
41	0	0
42	2.9	2.8
43	1.4	1.4
44	2.8	2.8
45	0	0
46	0	0
47	0	0
48	1.1	1.1
49	3.0	3.0
50	3.0	3.0
51	1.4	1.4
52	3.0	0
53	2.9	2.8
54	0	0
55	2.7	2.7
56	1.9	1.9
57	3.0	2.9
58	3.0	3.0
59	3.0	3.0
60	2.5	2.5
61	2.4	2.4
62	3.0	3.0
63	3.0	3.0
64	3.0	3.0
65	0	0
66	3.0	3.0
67	3.0	3.0
68	3.0	3.0
69	0	0
70	0	0
71	0	0
72	2.2	2.2
73	2.9	2.8
74	2.9	2.8
75	1.7	1.4
76	2.6	2.6
77	0.7	2.5
78	0	0
79	1.4	1.1
80	0	0
81	0	0
82	1.4	1.4
83	1.4	1.4
84	0	0
85	1.5	1.4
86	2.9	2.8
87	3.0	0.8
88	1.5	1.5
89	3.0	3.0
90	1.4	1.5
91	2.9	2.8
92	0	0
93	0	0
94	3.0	3.0
95	3.0	3.0
96	3.0	3.0
97	0	0
98	3.0	3.0
99	0	0
100	2.8	2.8
101	2.8	2.8
102	2.9	2.9
103	0	2.9
104	2.8	2.9
105	2.8	0
106	2.8	2.9
107	0	0
108	3.0	3.0
109	3.0	3.0
110	2.9	2.8
111	0	0
112	3.0	3.0
113	3.0	3.0
114	3.0	3.0
115	3.0	3.0
116	0	0
117	0	0
118	3.0	3.0
119	3.0	3.0
120	1.6	3.0
121	1.5	1.5
122	1.5	1.5
123	3.0	3.0
124	3.0	3.0
125	0	0
126	0	0
127	0	0
128	0	0
IC1002		
1	2.4	2.4
2	1.0	1.1
3	2.6	2.6
4	3.0	3.0
5	2.9	2.8
6	1.9	1.8
7	1.1	1.1
8	1.2	1.2
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	2.8	2.8
20	2.7	2.7
IC1003		
1	1.9	1.9
2	3.0	3.0
3	0	0
4	3.0	3.0
5	3.0	3.0
6	2.9	2.9
7	0	0.4
8	3.0	3.0
IC1004		
1	0	0
2	3.0	3.0
3	2.0	2.0
4	0	0
5	2.9	2.8
6	0.5	0.5
7	1.1	1.0
8	3.1	3.1
IC1005		
1	3.0	3.0
2	0	0
3	0	0
4	3.0	3.0
5	0	0
6	3.0	3.0
7	0	0
8	0	0
9	2.9	2.9
10	0	0
11	2.9	2.8
12	0	0
13	2.9	2.8
14	3.0	3.0
IC1006		
1	3.0	3.0
2	0	0
3	0	0
4	2.7	2.7
5	0	3.0
6	0	2.6
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	3.0	3.0
IC1007		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	3.0	3.0
IC1009		
1	0	0
2	0	0
3	2.8	2.5
4	3.0	3.0
5	7.2	3.0
6	3.1	3.1
7	0	6.7
8	3.0	3.0
IC1010		
1	2.2	2.2
2	2.2	2.2
3	0	0
4	3.0	3.0
5	3.0	3.0
Q1001		
E	0	0
C	0.8	1.4
B	0	0
Q1003		
E	0	0
C	1.2	1.3
B	1.5	1.5
Q1004		
E	0	0
C	1.2	1.2
B	1.5	1.5

<MSD CPU>

MODE PIN NO.	REC	PLAY
IC1401		
1	0	0
2	2.9	2.9
3	2.9	2.9
4	3.0	3.0
5	0	0
6	2.9	2.9
7	2.9	2.9
8	0	0
9	4.9	4.9
10	2.9	2.9
11	0	0.4
12	2.9	2.9
13	2.9	2.9
14	0	2.8
15	2.8	2.8
16	0	0
17	0	0
18	0	0
19	0	2.9
20	2.9	2.9
21	1.4	1.4
22	0	0.8
23	0	0
24	2.9	2.9
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0.6	0
41	2.9	2.9
42	0	0
43	2.9	2.9
44	0.5	2.9
45	2.9	2.9
46	0	0
47	0	0
48	2.9	2.9
49	0	0
50	0	0
51	0	0
52	2.9	2.9
53	0	0
54	1.5	1.4
55	1.5	1.4
56	1.4	1.4
57	1.4	1.4
58	0	0
59	2.9	2.9
60	2.9	2.9
61	0	0
62	1.4	1.0
63	1.4	1.4
64	0	0
65	0	2.9
66	2.9	2.9
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	0	0.8
74	2.9	2.9
75	0	2.8
76	0	2.9
77	0.5	2.9
78	2.9	2.8
79	2.9	2.9
80	0	0
81	3.0	3.0
82	2.0	1.9
83	2.9	2.9
84	2.9	2.9
85	0	0
86	0	0
87	0	0
88	0	0
89	0	0
90	1.8	1.8
91	2.9	2.9
92	2.2	2.2
93	1.5	1.5
94	0	0
95	0	1.4
96	0	0
97	0	0
98	0	0
99	1.4	1.4
100	0.7	0
101	0	0
102	2.9	2.9
103	0	0
104	0	0
105	0	0
106	0	0
107	2.9	2.6
108	0	0
109	1.4	1.4
110	0	0
111	0	0
112	0	0
113	0	0
114	0	0
115	0	0
116	0	0
117	2.9	2.9
118	2.9	2.9
119	2.9	2.9
120	0	0
121	0	0
122	0	0
123	0	0
124	0	0
125	2.6	2.6
126	2.4	2.6
127	2.9	2.9
128	2.9	2.9
129	2.2	2.2
130	0	0
131	0	0
132	1.0	1.0
133	0	0
134	0	0
135	0.4	0.5
136	0.4	0
137	0	2.2
138	2.2	2.2
139	2.2	0
140	2.2	0
141	2.1	0
142	0.6	0
143	0.4	0
144	0.4	0
145	0.5	0
146	0.5	0
147	0.4	0

MODE PIN NO.	REC	PLAY
148	0.5	0
149	0.5	0
150	0.5	0.5
151	0.5	0
152	0.4	0
153	0.6	0.4
154	0.6	0.5
155	0	0
156	2.2	2.2
IC1402		
1	-	-
2	2.9	2.9
3	-	-
4	0	0
5	-	-
6	0	0
7	-	-
8	2.9	2.9
Q1401		
E	2.9	2.9
C	2.9	2.9
B	0	0
Q1402		
E	0	0
C	2.9	2.9
B	0	0
Q1403		
E	0	0
C	2.9	2.9
B	0	0
Q1405		
E	0	0
C	2.2	2.2
B	0.7	0.7
Q1406		
E	2.8	2.9
C	0.4	0
B	2.2	2.2
Q1407		
E	2.9	0
C	0	0
B	0	2.9
Q1408		
E	2.9	2.9
C	2.7	2.7
B	0	0

<IR>

MODE PIN NO.	REC	PLAY
IC1801		
1	4.6	4.6
2	0	0
3	4.8	4.8
IC1802		
1	1.9	1.9
2	1.9	2.0
3	2.0	1.9
4	0	0
5	1.9	1.9
6	1.8	2.0
7	1.8	1.8
8	4.9	4.9
Q1801		
E	0	0
C	3.9	4.0
B	-	-
Q1802		
E	0	0
C	0	1.9
B	3.0	0

<VIDEO2>

MODE PIN NO.	REC	PLAY
IC3001		
1	1.0	1.0
2	0	0
3	1.2	1.0
4	1.1	1.1
5	0.8	0.8
6	0.6	0.6
7	0.8	0.8
8	0	0
9	0.9	0.9
10	0.9	0.9
11	0.9	0.8
12	0.9	0.8
13	2.1	2.1
14	2.1	2.1
15	2.1	2.1
16	1.1	1.1
17	0	0
18	0.5	0.5
19	0.8	0.8
20	0.9	0.9
21	1.1	1.0
22	1.0	1.0
23	1.1	1.0
24	0	1.0
25	0	0
26	0.9	0.9
27	0.9	0.9
28	0	0
29	0.9	0.9
30	0.9	0.9
31	0.9	0.9
32	0.9	0.9
33	0	0
34	0.9	0.9
35	0.9	0.9
36	0.9	0.9
37	0.9	0.9
38	2.2	2.1
39	2.2	2.1
40	1.9	1.9
41	0	0
42	1.4	1.4
43	1.7	1.4
44	2.1	1.7
45	2.1	0
46	2.1	2.1
47	1.2	1.2
48	1.2	1.2
49	1.2	1.2
50	1.2	1.2
51	0	0
52	0	0
53	0	0
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	2.2	2.2
63	2.8	2.8
64	2.8	1.4
65	2.8	1.3
66	2.4	0
67	0	2.8
68	0	2.8
69	2.8	1.4
70	1.4	2.8
71	2.9	3.0
72	3.0	0
73	0	0
74	0	2.9
75	0	0
76	3.0	3.0
77	0	0
78	2.8	2.8
79	2.8	2.8
80	2.9	2.8
81	1.4	1.4
82	0	0
83	0	0
84	0	0
85	0	0
86	0	0.7
87	2.2	2.1
88	2.9	2.8
89	2.9	2.8
90	1.4	2.9
91	1.4	2.1
92	0	0
93	0.7	0
94	1.4	1.4
95	1.7	1.5
96	1.4	1.4
97	0	0
98	0	0
99	1.4	1.4
100	0	0
IC3002		
1	0.9	0.9
2	0.9	0.9
3	0.9	0.9
4	0.9	0.9
5	0.9	0.9
6	0.9	0.9
7	0.4	0
8	0.9	0.9
9	0	0
10	0.4	0
11	0	0
12	0	0
13	–	–
14	2.9	2.9
15	2.9	2.9
16	0	0
17	0	0
18	1.2	1.2
19	0	0
20	2.2	2.1
21	1.1	1.1
22	0	0
23	1.9	1.9
24	0	0
25	0	0
26	0.9	0
27	1.0	0
28	1.0	0
29	2.1	0
30	1.0	0.6
31	0.9	0.5
32	0.9	0.8
33	0.9	1.0
34	0.9	0.4
35	0.9	0.9
36	2.1	2.2
37	2.1	2.2
38	–	–
39	0	0
40	0	0
41	0.6	0.6
42	0.8	0
43	0.8	0.8
44	0.9	1.0
45	0.9	0
46	0.9	0.9
47	2.9	2.9
48	2.9	2.9
49	1.0	0
50	1.0	0
51	1.0	2.2
52	0	0
53	0	0
54	0.5	2.8
55	2.2	2.1
56	1.4	2.7
57	0.5	2.7
58	1.1	1.1
59	1.7	1.7
60	0.5	2.8
61	0	0
62	0	0
63	–	–
64	2.8	2.8
65	2.9	2.9
66	0.7	2.7
67	0.9	0.9
68	0.9	0.9
69	0.5	2.7
70	1.0	1.0
71	1.0	1.0
72	0	0
73	0.7	1.0
74	1.0	0.9
75	0.9	0.9
76	1.5	0
77	1.6	0
78	0.9	1.0
79	0	0
80	1.2	1.2
81	1.6	1.0
82	0.6	0.6
83	0.5	0.5
84	1.6	0.8
85	1.1	1.1
86	2.2	2.1
87	2.1	2.1
88	–	–
89	0	0
90	0	0
91	1.1	1.1
92	0	0
93	0.6	0.6
94	0.5	0.5
95	0	0
96	1.0	1.1
97	0.9	1.1
98	0.9	0.9
99	0	0
100	0	0
IC3003		
1	0	0
2	1.1	1.1
3	0	1.1
4	2.1	2.1
5	0	0
6	2.9	2.9
7	1.9	1.6
8	0	1.8
9	1.8	1.7
10	1.4	1.4
11	1.3	1.2
12	1.5	1.3
13	1.3	1.3
14	1.2	1.4
15	1.4	1.5
16	1.7	1.4
17	1.7	1.4
18	1.0	1.3
19	1.0	1.6
20	2.5	2.5
21	0	0
22	2.9	2.8
23	0	0
24	2.2	2.2
25	1.0	1.2
26	0.8	1.0
27	1.0	1.2
28	1.0	1.3
29	1.0	1.3
30	1.0	1.4
31	1.0	1.3
32	1.0	1.3
33	1.0	1.3
34	1.0	1.3
35	1.0	1.3
36	1.0	0.9
37	1.0	1.2
38	1.0	1.3
39	1.0	1.3
40	1.0	1.3
41	2.9	2.9
42	0	0
43	0	0
44	0	0
45	0	0
46	0	1.0
47	0	1.9
48	0	1.4
49	2.9	2.9
50	2.9	2.9
51	2.9	2.8
52	2.7	2.7
53	2.7	1.2
54	0	0
55	0	0
56	1.2	1.2
57	2.8	2.9
58	2.1	2.1
59	1.0	0
60	0	0
61	2.9	2.9
62	1.4	1.3
63	1.4	1.3
64	1.4	1.3
65	1.4	1.3
66	1.4	1.4
67	1.4	1.4
68	1.4	1.2
69	0	0
70	2.9	2.9
71	2.9	0
72	1.5	1.4
73	0	0
74	0	1.4
75	0	0.6
76	2.9	0.6
77	2.8	2.8
78	0	0
79	0	0
80	0	0
81	0	0
82	1.4	1.4
83	0	0
84	0	0
85	0	0
86	0	0
87	2.9	2.8
88	2.9	0
89	0	2.9
90	2.9	0
91	0	2.9
92	2.9	2.9
93	1.4	1.4
94	0	0
95	0	0
96	0	0
97	0	1.4
98	2.8	2.9
99	0	0
100	0	0
101	2.2	2.1
102	2.2	2.1
103	1.0	1.1
104	1.0	1.1
105	1.0	1.1
106	1.0	1.1
107	0	1.1
108	1.0	1.1
109	1.0	1.1
110	1.0	1.1
111	2.1	2.1
112	0	0
113	1.0	1.1

MODE PIN NO.	REC	PLAY
114	1.0	1.1
115	1.0	1.1
116	1.0	1.1
117	1.0	1.1
118	1.0	1.1
119	1.0	1.1
120	1.0	1.1
121	2.2	2.1
122	0	0
123	0	2.2
124	2.2	2.2
125	0	0
126	2.1	2.1
127	0	0
128	2.9	2.8
129	0	0
130	2.9	2.9
131	1.4	1.4
132	2.6	2.5
133	0	0
134	2.8	0
135	0	0
136	0	0
137	0	0
138	0	0
139	0	0
140	2.2	2.1
141	0	0
142	2.9	2.9
143	0	0
144	2.8	2.9
145	0	0
146	2.8	2.8
147	2.9	2.9
148	0	0
149	0	0
150	2.2	2.1
151	1.1	1.2
152	1.1	1.2
153	1.1	1.2
154	1.2	1.2
155	2.0	2.1
156	2.0	2.2
IC3004		
1	2.9	2.9
2	1.0	1.3
3	1.0	1.3
4	1.0	1.3
5	1.0	1.2
6	2.9	2.9
7	1.0	1.3
8	1.0	1.2
9	1.0	1.2
10	1.1	1.3
11	–	–
12	–	–
13	0	0
14	0	0
15	2.5	2.5
16	1.0	0.5
17	0	0
18	1.0	1.3
19	1.7	1.4
20	1.7	1.4
21	1.4	1.5
22	2.9	2.9
23	0	0
24	1.2	1.3
25	1.3	1.3
26	1.5	1.3
27	1.3	1.2
28	1.4	1.4
29	1.8	1.7
30	1.9	1.6
31	1.9	1.6
32	0	0
33	–	–
34	–	–
35	1.0	1.3
36	1.0	0.5
37	1.0	1.3
38	1.0	1.4
39	0	0
40	1.0	0.5
41	1.0	1.3
42	0.8	1.0
43	1.0	1.1
44	0	0
IC3005		
1	2.9	0
2	2.5	2.5
3	2.4	2.5
4	0	0
5	4.9	4.9
6	2.4	2.4
7	2.4	2.5
8	4.9	4.9
9	0	0
10	2.8	1.2
11	0	1.1
12	0	1.5
13	0	1.5
14	0	1.4
15	2.9	2.9
16	0	0
17	0	1.4
18	0	1.3
19	0	1.4
20	0	1.4

<VIDEO1>

MODE PIN NO.	REC	PLAY
IC3201		
1	1.5	1.4
2	1.5	1.5
3	1.5	1.4
4	1.5	1.2
5	1.5	0.8
6	1.5	0.7
7	0	0
8	0	0
9	0	0
10	0	0
11	2.6	1.9
12	2.9	2.8
13	0	2.0
14	0	0
15	0	0
16	1.4	1.3
17	1.6	1.1
18	1.4	1.4
19	1.4	1.3
20	0	0
21	0	0
22	2.9	2.8
23	2.6	2.5
24	0	0
25	1.1	1.1
26	0	0
27	1.2	1.1
28	1.7	1.6
29	2.9	2.9
30	0	0
31	2.9	2.8
32	1.6	1.5
33	1.4	1.4
34	1.3	1.4
35	1.4	1.4
36	1.4	1.4
37	1.5	1.4
38	0.6	0
39	2.9	0
40	0	2.8
41	0	1.7
42	1.2	1.7
43	2.9	2.9
44	0	1.4
45	0	0
46	2.2	1.1
47	0	0
48	0	0
Q3201		
E	1.7	1.7
C	3.0	3.0
B	2.3	2.3
Q3202		
E	1.5	1.5
C	3.0	3.0
B	2.2	2.1
Q3204		
E	1.5	1.5
C	3.0	3.0
B	1.7	1.6

<VIDEO3>

MODE PIN NO.	REC	PLAY
IC3501		
1	2.8	0.9
2	0	1.1
3	0	0
4	0.4	1.9
5	0	1.1
6	2.9	2.9
7	0	1.2
8	1.2	1.2
9	0	1.2
10	1.0	1.1
11	0	1.1
12	0	0
13	2.6	1.8
14	2.0	1.9
15	1.7	1.6
16	0.5	1.7
17	1.9	0.7
18	1.2	1.0
19	1.8	1.2
20	2.3	1.9
21	2.3	1.8
22	2.3	1.7
23	2.8	2.1
24	0	0
25	1.5	1.4
26	2.9	2.7
27	1.9	1.8
28	2.9	2.8
29	1.9	1.8
30	0	0
31	1.1	1.0
32	2.9	2.8
33	2.5	2.6
34	0	0
35	2.4	1.0
36	2.4	1.0
37	2.9	2.8
38	0	1.0
39	2.4	1.9
40	0	1.1
41	2.6	1.7
42	0	1.9
43	2.5	1.7
44	0	1.7
45	2.9	2.7
46	1.2	1.2
47	0	0
48	2.2	1.6
49	2.9	2.9
50	2.0	0.8
51	2.0	0.7
52	0	0
53	2.3	1.4
54	0.9	0.9
55	2.4	2.3
56	2.2	1.3
57	2.9	2.7
58	1.4	1.1
59	2.4	1.6
60	0.8	0.8
61	0	0
62	1.8	1.7
63	0	2.9
64	0	0
IC3502		
1	2.9	2.2
2	2.9	1.8
3	2.9	2.9
4	0	0
5	0	0
6	0	0
7	2.6	2.9
8	1.6	1.6
9	0.9	0.8
10	0.4	0.4
11	2.9	2.9
12	1.5	1.5
13	2.9	2.8
14	2.8	2.9
15	1.9	2.1
16	0	0
17	-4.5	-4.5
18	0	8.2
19	4.9	4.9
20	0	1.3
21	0.6	0.7
22	2.9	2.0
23	0	0
24	2.3	1.0
25	2.9	2.9
26	0	0
27	0	0
28	-6.3	1.8
29	4.7	4.9
30	4.8	4.9
31	4.7	4.9
32	-6.3	1.8
33	0	0
34	0	0
35	2.9	2.9
36	1.3	1.0
37	0	0
38	2.9	2.0
39	0.7	0.7
40	1.4	1.4
41	0	0
42	0	0
43	2.8	0
44	0	2.9
45	1.4	1.4
46	2.9	2.8
47	0	2.8
48	2.8	0
49	0	0
50	0	0
51	1.5	1.4
52	0	0
53	0	0
54	0.5	2.1
55	0.9	1.9
56	0	0
57	2.9	0
58	2.9	2.2
59	2.9	0
60	2.9	2.9
61	2.9	1.7
62	2.9	2.4
63	0	0
64	0	1.0
IC3503		
1	1.7	1.7
2	0	1.9
3	1.2	1.2
4	2.9	2.8
5	0.8	0.8
6	0.9	0.9
7	1.2	1.2
8	1.2	1.2
9	1.2	1.1
10	2.4	2.3
11	2.9	2.8
12	2.9	2.8
13	4.9	4.9
14	2.9	2.8
15	2.9	2.8
16	1.7	1.7
17	0	0
18	1.2	1.2
19	1.1	1.1
20	0	1.6
21	1.2	1.2
22	0	0
23	0	0
24	0	2.0
25	0	0
26	3.0	3.0
27	2.9	2.9
28	0	0
29	0	0
30	2.9	2.8
31	2.9	2.8
32	1.9	1.9
Q3501		
E	1.5	0.6
C	2.2	2.4
B	2.2	1.3
Q3502		
E	0	0
C	0	0
B	2.8	2.8
Q3503		
E	1.6	1.8
C	2.9	2.7
B	2.2	2.4
Q3504		
E	2.4	1.9
C	2.2	1.8
B	2.5	2.0
Q3505		
E	0	0
C	0.8	1.0
B	0.8	0.7
Q3506		
E	0	0
C	2.4	0
B	0.5	0.7
Q3507		
E	0	0
C	0	0
B	-6.4	0.8
Q3508		
E	0	0
C	0	1.0
B	0	0.5
Q3509		
E	4.9	4.9
C	4.8	4.9
B	4.2	4.2
Q3511		
E	2.6	1.9
C	2.4	1.4
B	2.6	2.1
Q3512		
E	0	0
C	2.6	1.9
B	0	0
Q3513		
1	2.0	1.3
2	2.6	1.3
3	0	0
4	2.5	1.8
5	2.0	1.3
6	2.9	2.7

<A/V OUT>

MODE PIN NO.	REC	PLAY
IC3701		
1	1.9	1.9
2	1.1	1.1
3	2.6	2.2
4	1.6	1.6
5	0	0
6	0	0
7	0	0
8	0	0
9	2.4	2.4
10	2.2	2.2
11	1.6	1.6
12	1.7	1.7
13	0	0
14	2.0	2.0
15	4.9	4.9
16	3.5	3.5
17	0	0
18	1.3	1.2
19	1.8	1.8
20	2.3	2.3
IC3703		
1	0	0
2	4.9	4.9
3	3.4	3.5
4	0	0
5	0	0
Q3701		
E	0	0
C	1.6	1.6
B	0	0
Q3705		
E	2.2	2.2
C	0	0
B	1.5	1.5
Q3706		
E	1.3	1.3
C	0	0
B	0.7	0.7
Q3707		
E	1.4	1.4
C	0	0
B	0.7	0.7

<YMCA/SSG>

MODE PIN NO.	REC	PLAY
IC4201		
1	1.2	0
2	1.3	0
3	1.0	0
4	0.8	0
5	0.9	0
6	0	0
7	2.9	2.9
8	0.8	0
9	1.8	0
10	0.6	0
11	0.5	0
12	0	0
13	0	0
14	0	0
15	2.9	2.9
16	0	0
17	0	0
18	2.9	2.9
19	0	0
20	0	0
21	0	0
22	1.5	0
23	0	0
24	0	0
25	2.9	2.9
26	2.9	2.9
27	0	0
28	0	0
29	2.9	2.9
30	3.1	3.1
31	2.6	3.1
32	2.1	2.4
33	1.6	1.6
34	1.1	1.1
35	0	0
36	0	0
37	0	0.9
38	2.9	2.9
39	1.4	3.5
40	1.4	0.9
41	1.4	1.1
42	1.5	1.1
43	0	0
44	0	0
45	2.9	2.9
46	0	0
47	0	0
48	1.4	1.1
IC4301		
1	1.1	0
2	1.4	0
3	2.9	2.9
4	0	0
5	0	0
6	0.4	0
7	0.6	0
8	1.8	0
9	0.9	0
10	1.0	0
11	1.0	0
12	1.1	0
13	1.3	0
14	2.9	2.9
15	0	0
16	1.5	0
17	0	0
18	1.4	0
19	0	0
20	0	0
21	1.3	0
22	1.3	1.3
23	0	0
24	2.9	0.6
25	2.9	2.9
26	0	0
27	2.9	2.9
28	0	0
29	0	0.6
30	0	0
31	2.9	2.9
32	0	0
33	0	0
34	2.9	2.9
35	2.9	2.9
36	2.9	0.5
37	0	0
38	1.2	1.4
39	1.6	0
40	0	0
41	0	0
42	1.1	0.6
43	1.1	0
44	0.4	1.4
45	0	0
46	0	0
47	2.9	2.9
48	0	0
49	2.2	2.2
50	0	0
51	1.1	0
52	0.8	0
53	0	0
54	0	0
55	3.0	3.0
56	3.0	3.0
57	3.0	3.0
58	3.0	0
59	0	0
60	2.9	2.9
61	0	0
62	0	0
63	1.4	0
64	1.0	0
65	1.5	0
66	0.9	2.8
67	0	0
68	2.9	2.9
69	0	0
70	1.7	0
71	0.8	0
72	1.4	3.0
73	2.8	2.8
74	0	0
75	0	0
76	1.0	0.8
77	3.0	0.9
78	3.0	3.0
79	3.0	3.0
80	1.3	2.8
81	2.9	2.8
82	0	0
83	1.4	1.3
84	1.5	1.5
85	1.3	2.6
86	2.2	2.2
87	2.6	0
88	2.2	0
89	0	0
90	0	1.0
91	0	1.0
92	1.0	0.7
93	0	0.7
94	0	0.8
95	0	0
96	0	0.5
97	0	0.4
98	0	1.7
99	0	0.4
100	0	0.4
101	0	0.7
102	0	1.0
103	0	0.6
104	0	0.5
105	0	0
106	0	0
107	2.2	2.2
108	0	0
109	2.2	2.3
110	0	0
111	0	0
112	0	0
113	0	1.0
114	0	0
115	1.3	1.2
116	0.8	0.8
117	0.8	0.7
118	0.7	0.7
119	0.8	0.7
120	0.7	0.7
121	0.7	0.7
122	0.8	0.7
123	2.2	2.2
124	0	0
125	0.5	0.6
126	0.4	0
127	0.4	0.4
128	1.8	1.7
129	0	0
130	0.6	0.4
131	09	0.6
132	0.8	0.9
133	0.8	0.8
134	2.2	2.2
135	0	0
136	0	0
137	2.9	2.9
138	0	0
139	2.2	2.2
140	0	0
141	1.3	1.5
142	1.1	1.4
143	0.8	1.3
144	1.2	1.3
145	0.7	0.8
146	0.6	0.4
147	0.5	0.5
148	2.0	2.2
149	0.7	0.6
150	0.9	1.2
151	1.2	1.5
152	1.3	1.0
153	2.9	2.9
154	0	0
155	0	0
156	0	0
157	0	0
158	0	0
159	2.8	2.7
160	2.4	2.4
161	0	0
162	0	0
163	2.9	2.9
164	2.4	2.4
165	0	0
166	2.4	2.4
167	1.2	1.3
168	2.9	2.9
169	0	0
170	1.2	1.1
171	1.2	1.1
172	1.0	1.2
173	0.7	0.6
174	2.1	2.4
175	0	0
176	0.6	0.5
177	0.4	0.5
178	0.8	0.7
179	1.1	1.2
180	1.1	1.2
182	1.3	1.4
183	2.9	2.9
184	0	0
185	3.0	3.0
186	3.0	3.0
187	2.2	2.2
188	0	0
189	0	0
190	2.9	2.9
191	0	0
192	2.9	2.9
193	2.4	2.2
194	2.9	2.9
195	0	2.9
196	2.9	2.9
197	2.9	2.9
198	0.7	0.7
199	2.9	2.9
200	2.9	2.9
201	2.9	2.9
202	2.9	2.9
203	0	0
204	0	0
205	2.2	2.2
206	0	0
207	0	0
208	0	0
IC4302		
1	0.8	0
2	0	0
3	1.4	1.4
4	1.0	1.0
5	1.0	1.0
6	1.1	1.1
7	0.5	0.4
8	0.5	0.6
9	0.6	0.6
10	2.3	2.4
11	0.6	0.6
12	0.9	1.0
13	1.3	1.2
14	1.2	1.1
15	1.2	1.2
16	0	0
17	2.4	2.4
18	2.8	2.8
19	2.9	2.9
20	0	0
21	2.9	2.9
22	2.4	2.4
23	2.4	2.4
24	0	0
25	1.2	1.2
26	1.3	1.1
27	1.4	1.3
28	0.9	0.9
29	0.7	0.6
30	0	2.1
31	0.7	0.6
32	0.6	0.6
33	0.5	0.5
34	1.2	1.1
35	1.1	1.1
36	1.2	1.1
37	1.3	0
38	0	0
Q4301		
E	2.1	2.1
C	0	0
B	1.5	1.5

<IRIS & AF/ZOOM>

MODE PIN NO.	REC	PLAY
IC4801		
1	1.7	1.7
2	0.7	0.8
3	0.8	0.8
4	4.9	4.9
5	1.9	2.0
6	1.9	2.0
7	0.6	0.7
8	2.6	2.6
9	0	2.0
10	2.0	2.0
11	0	0
12	0.4	0.4
13	0.4	0.4
14	1.0	1.0
IC4802		
1	1.9	3.9
2	1.6	1.6
3	1.5	1.5
4	0	0
5	1.9	1.9
6	1.9	1.9
7	2.0	1.9
8	6.6	6.6
IC4851		
1	0	0
2	0.7	0.6
3	0	0
4	0.4	0.4
5	0.4	0.4
6	0	0
7	0	0
8	2.9	2.8
9	6.7	6.7
10	0	0.7
11	0	0
12	0	0.6
13	6.6	6.7
14	0	0.7
15	0	0
16	0	0.8
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	6.6	6.6
24	1.1	0.6
25	0	0
26	1.1	0.6
27	6.6	6.6
28	1.0	0.6
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	3.0	2.9
35	3.0	2.9
36	1.0	1.1
37	1.4	1.4
38	3.0	3.0
Q4801		
E	0.4	0.4
C	1.3	1.4
B	1.0	1.0
Q4851		
E	6.7	6.7
C	6.7	6.6
B	6.0	5.9
Q4852		
E	0	0
C	0	0
B	2.8	2.8

<CDS/AGC>

MODE PIN NO.	REC	PLAY
IC5501		
1	-6.8	12.0
2	-6.7	-6.9
3	0	0
4	0	0
5	0	12.0
6	2.9	2.8
7	0	0
8	2.9	0
9	0	0
10	2.9	0
11	-0.9	0
12	2.7	0
13	2.9	0
14	2.7	0
15	0	0
16	12.0	12.1
17	-6.4	12.0
18	-6.4	0
19	0	0
20	12.1	12.1
IC5502		
1	2.9	0
2	2.7	0
3	2.9	0
4	0	0
5	0	0
6	0	0
7	2.9	0
8	2.9	2.8
9	0.6	0
10	0	0
11	0	0
12	1.6	0
13	1.4	0
14	2.9	2.8
15	2.9	2.8
16	2.2	0
17	0.7	0
18	0.7	0
19	0	0
20	1.5	0
21	0	0
22	0	0
23	0	0
24	2.8	0
25	2.9	2.8
26	0	0
27	2.6	2.8
28	2.9	2.8
29	1.4	1.3
30	0	0
31	1.4	1.4
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	2.9	2.8
38	3.0	3.0
39	2.9	3.0
40	0	0
41	2.9	3.0
42	0	0
43	0	0
44	0	0
45	1.5	0
46	2.9	0
47	0	0
48	2.7	0
IC5503		
1	0	0
2	1.3	1.3
3	0	0
4	1.4	1.4
5	2.9	3.0

MODE PIN NO.	REC	PLAY
IC5601		
1	1.6	0.7
2	3.7	3.7
3	0	0
4	3.0	3.0
5	3.0	3.0
6	0	0
7	2.3	2.3
8	0	2.2
9	0	0
10	0.5	0.5
11	0	0
12	0	0
13	0	0
14	0	0
15	2.3	2.1
16	1.2	1.2
17	1.4	3.5
18	3.1	2.1
19	2.0	2.5
20	3.7	3.7
21	1.9	1.9
22	1.8	1.9
23	0	0
24	0	0
25	4.9	5.0
26	1.8	2.5
27	2.0	2.5
28	0.5	0
29	3.2	2.0
30	1.2	1.5
31	1.9	1.9
32	0	0
33	1.2	0.6
34	1.2	1.5
35	5.0	4.9
36	0.8	0
37	0	0
38	0	0
39	2.7	0
40	2.8	2.8
41	2.2	2.2
42	1.8	1.9
43	4.9	5.0
44	0	0
45	0	0
46	0	0
47	3.1	3.1
48	1.1	1.0
IC5602		
1	4.9	4.9
2	0	0
3	1.3	1.3
4	4.9	5.0
5	6.7	6.6

<REG>

MODE PIN NO.	REC	PLAY
IC6001		
1	1.0	0.9
2	2.6	0
3	1.1	1.1
4	1.0	1.0
5	1.2	1.2
6	0	0
7	0.9	0.9
8	0	0
9	0	0
10	0.5	0.5
11	0.5	0.5
12	2.6	2.6
13	1.0	1.0
14	0.9	1.0
15	1.2	1.2
16	1.0	1.0
17	1.1	1.1
18	1.1	1.1
19	1.0	1.0
20	1.0	1.0
21	0	1.0
22	0	0
23	6.7	6.7
24	1.0	1.0
25	1.2	1.2
26	1.3	1.3
27	3.0	3.0
28	3.0	3.0
29	6.7	6.6
30	2.6	2.6
31	2.6	2.6
32	2.6	2.6
33	3.0	3.0
34	3.0	3.0
35	3.0	3.0
36	0	0
37	2.9	2.9
38	2.8	2.7
39	2.0	2.1
40	0	0
41	3.6	3.5
42	0	0
43	2.0	2.0
44	3.9	3.9
45	5.6	5.6
46	6.7	6.7
47	1.8	1.8
48	1.8	1.8
IC6002		
1	0	0
2	15.2	15.2
3	12.1	12.1
4	0	0
Q6001		
1	0	0
2	6.4	6.4
3	6.7	6.7
4	3.2	3.1
Q6002		
1	0	4.2
2	6.5	4.9
3	6.7	4.9
4	1.3	1.3
Q6003		
1	0	0
2	6.5	6.1
3	0	6.7
4	4.9	4.9
Q6004		
E	6.7	6.7
C	3.0	3.0
B	3.5	3.5
Q6005		
1	0	0
2	6.5	6.4
3	6.7	6.7
4	2.2	2.2

MODE PIN NO.	REC	PLAY
Q6006		
G	2.8	2.7
D	6.7	6.7
S	0	0
Q6007		
E	0	0
C	4.6	4.6
B	0	0
Q6008		
E	6.7	6.6
C	4.6	4.6
B	6.3	6.3
Q6010		
E	0	0
C	0	0
B	0.6	0.5
Q6011		
E	0	0
C	4.9	4.9
B	4.2	4.2
Q6013		
E	0	-6.9
C	-7.5	-7.5
B	-7.5	-7.5
Q6014		
E	6.7	6.7
C	5.9	5.9
B	6.1	6.1
Q6016		
E	0	0
C	6.2	6.1
B	-0.9	-3.1
Q6017		
E	3.3	3.3
C	-2.4	-3.3
B	3.0	3.0
Q6018		
E	6.7	6.7
C	6.6	6.6
B	0	0
Q6019		
E	0	0
C	0	0
B	3.0	3.0
Q6201		
E	6.7	6.7
C	-5.7	0
B	6.7	6.7
Q6202		
E	0	0
C	6.7	6.7
B	0	0
Q6203		
E	-5.1	0
C	0	0
B	0	0

<LCD CTL>

MODE PIN NO.	REC	PLAY
IC7101		
1	–	-
2	–	-
3	–	-
4	–	-
5	–	-
IC7102		
1	–	-
2	–	-
3	–	-
4	–	-
5	–	-

<MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	0	0
2	1.1	1.1
3	3.1	3.0
4	1.1	1.1
5	0	0
6	0	0
7	1.1	1.1
8	0	0
9	0	0
10	0	0
11	0	0
12	5.9	5.9
13	0	0
14	0.6	0.5
15	0	0
16	0	0
17	0.5	0.6
18	1.3	1.2
19	0.7	0.5
20	0.9	0.9
21	0.8	0.9
22	0.9	0.9
23	2.5	2.5
24	2.4	2.5
25	2.4	2.5
26	2.5	2.5
27	2.4	2.5
28	2.5	2.5
29	1.5	1.4
30	2.4	2.4
31	2.4	2.4
32	2.5	2.4
33	4.9	4.9
34	0	0
35	0.6	0.6
36	0.5	0.6
37	1.1	1.1
38	0	0
39	0	0
40	0	0
41	0	0
42	2.8	2.8
43	0	0
44	2.9	2.8
45	2.9	2.8
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	1.9	1.9
54	1.5	1.5
55	0.6	0.6
56	2.7	2.7
57	2.1	2.1
58	0	0
59	0.7	0.6
60	0	0
61	2.4	2.5
62	2.6	2.5
63	2.1	2.2
64	2.5	2.5
65	2.4	2.4
66	2.4	2.4
67	2.4	2.4
68	1.5	1.4
69	0	0
70	0.4	0.4
71	1.1	1.1
72	1.1	1.1
73	1.1	1.1
74	2.4	2.4
75	2.4	0.4
76	2.4	2.4
77	0.7	0.7
78	2.7	2.7
79	2.7	2.7
80	2.7	2.7
IC1602		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	1.1	1.1
11	2.6	2.6
12	1.1	1.1
13	2.7	2.6
14	1.1	1.1
15	2.7	2.7
16	3.0	3.0
IC1603		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0.6	0.6
11	0.8	0.8
12	0.6	0.6
13	0.9	0.9
14	0.5	0.5
15	0.8	0.8
16	1.2	1.2
Q1601		
E	4.9	0.5
C	0	0
B	4.9	1.1
Q1602		
E	0	0
C	4.9	4.9
B	0	0

<MAIN AUDIO>

MODE PIN NO.	REC	PLAY
IC2201		
1	4.1	4.1
2	3.0	3.0
3	0	0
4	2.0	2.0
5	2.0	2.0
6	2.0	2.0
7	0	0
8	2.0	2.0
9	2.0	2.0
10	0	0
11	0	0
12	0	4.1
13	3.0	2.9
14	3.0	2.9
15	0	0
16	0	0
17	2.9	2.8
18	2.0	2.0
19	2.0	2.0
20	2.0	2.0
21	2.0	2.0
22	2.0	2.0
23	2.0	2.0
24	0	0
25	0	0
26	0	0
27	0	2.0
28	2.0	2.0
29	2.0	2.0
30	2.0	2.0
31	2.0	2.0
32	2.0	2.0
33	2.0	2.0
34	2.0	2.0
35	2.0	2.0
36	2.0	2.0
37	2.0	2.0
38	2.0	2.0
39	0	0
40	2.0	2.0
41	2.0	2.0
42	2.0	2.0
43	2.0	2.0
44	0	0
45	2.1	2.0
46	2.0	2.0
47	2.0	2.0
48	2.1	2.1
IC2131		
1	2.7	2.8
2	2.8	2.8
3	0	2.7
4	0	0
5	2.8	0
6	2.8	2.8
7	2.7	2.8
8	4.6	4.6
Q2201		
E	4.1	4.1
C	4.9	4.9
B	4.8	4.8
Q2204		
E	0	0
C	0	0
B	0.7	0.7
Q2205		
1	1.4	1.4
2	2.0	2.0
3	4.1	4.1
4	1.4	1.4
5	2.0	2.0
6	4.1	4.1
Q2206		
E	0	0
C	0	0
B	3.2	3.2
Q2451		
1	0	0
2	0.7	0.7
3	0	0
4	0	0
5	0.7	0.7
6	0	0
Q2452		
E	4.9	4.9
C	4.3	4.3
B	4.3	4.3
Q2453		
E	4.3	4.3
C	4.3	4.3
B	3.7	3.8
Q2454		
E	0	0
C	6.2	0
B	3.6	0
Q2455		
E	0	0
C	0	0
B	3.0	3.0
Q2601		
E	3.3	3.3
C	0	0
B	2.7	2.7
Q2602		
E	3.3	3.3
C	0	0
B	2.7	2.7
Q2603		
E	4.2	4.2
C	4.9	4.9
B	4.9	4.9
Q2604		
E	2.7	2.7
C	1.5	1.5
B	2.0	2.1
Q2605		
E	2.6	2.7
C	1.5	1.5
B	0	2.0

<SHUTTER MIX>

MODE PIN NO.	REC	PLAY
IC2501		
1	2.8	2.1
2	2.8	2.1
3	2.8	2.1
4	0	0
5	2.8	2.0
6	2.8	2.1
7	2.8	2.0
8	4.8	4.8

<CCD>

MODE PIN NO.	EE
IC5001	
1	-6.4
2	-6.4
3	0
4	0
5	-6.8
6	0
7	7.0
8	12.0
9	0
10	7.6
11	8.0
12	10.1
13	1.6
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Q5002	
G	6.9
D	12.1
S	7.0

<VF>

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6	2.5
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10	0
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46	2.2
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51	2.6
52	4.1
53	2.4
54	3.1
55	5.1
56	5.1
57	3.6
58	4.9
59	2.5
60	4.9
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63	1.6
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Q7201	
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C	4.8
B	3.5

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MODE PIN NO.	EE
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C	4.7
B	0.5

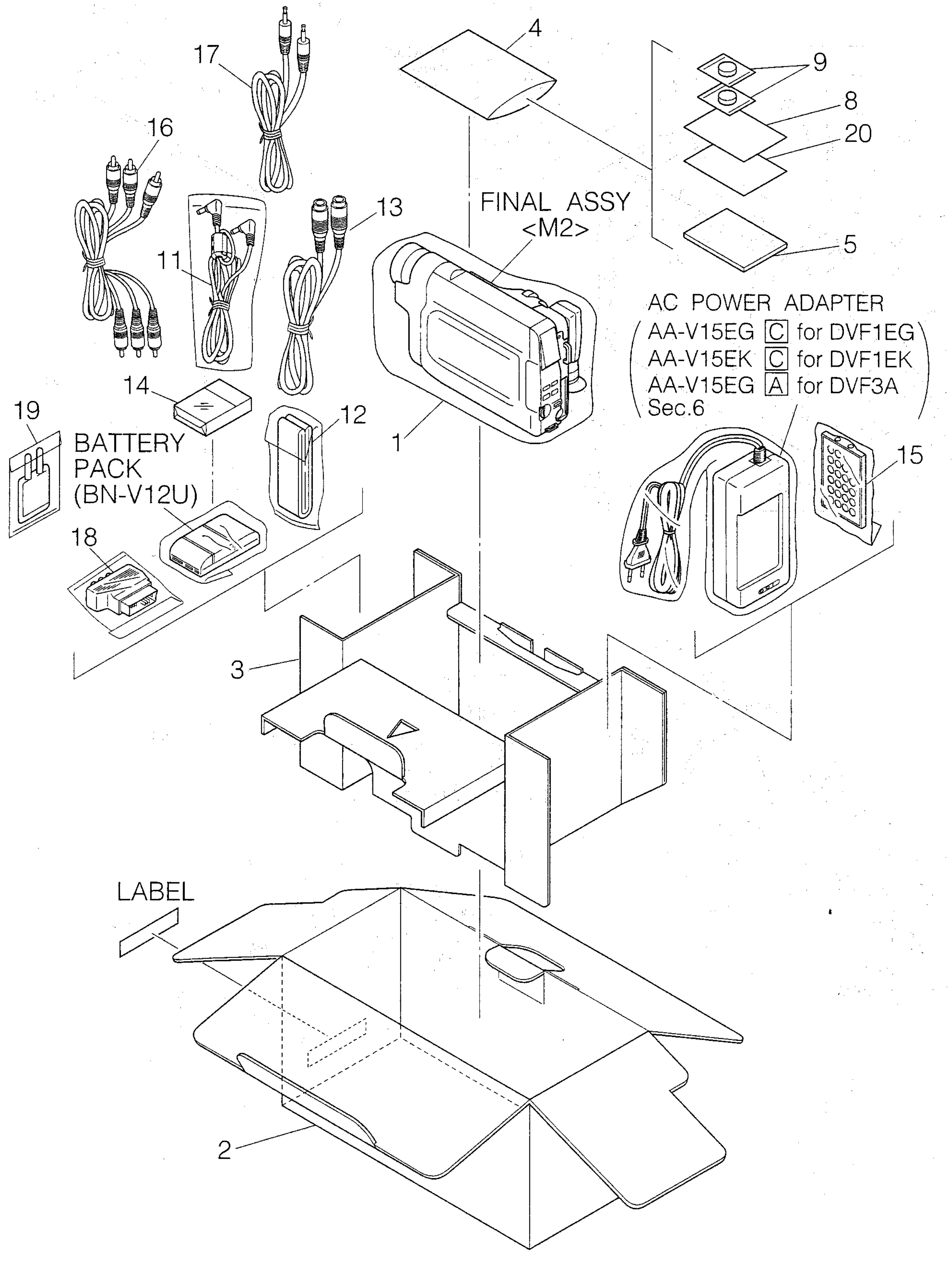
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



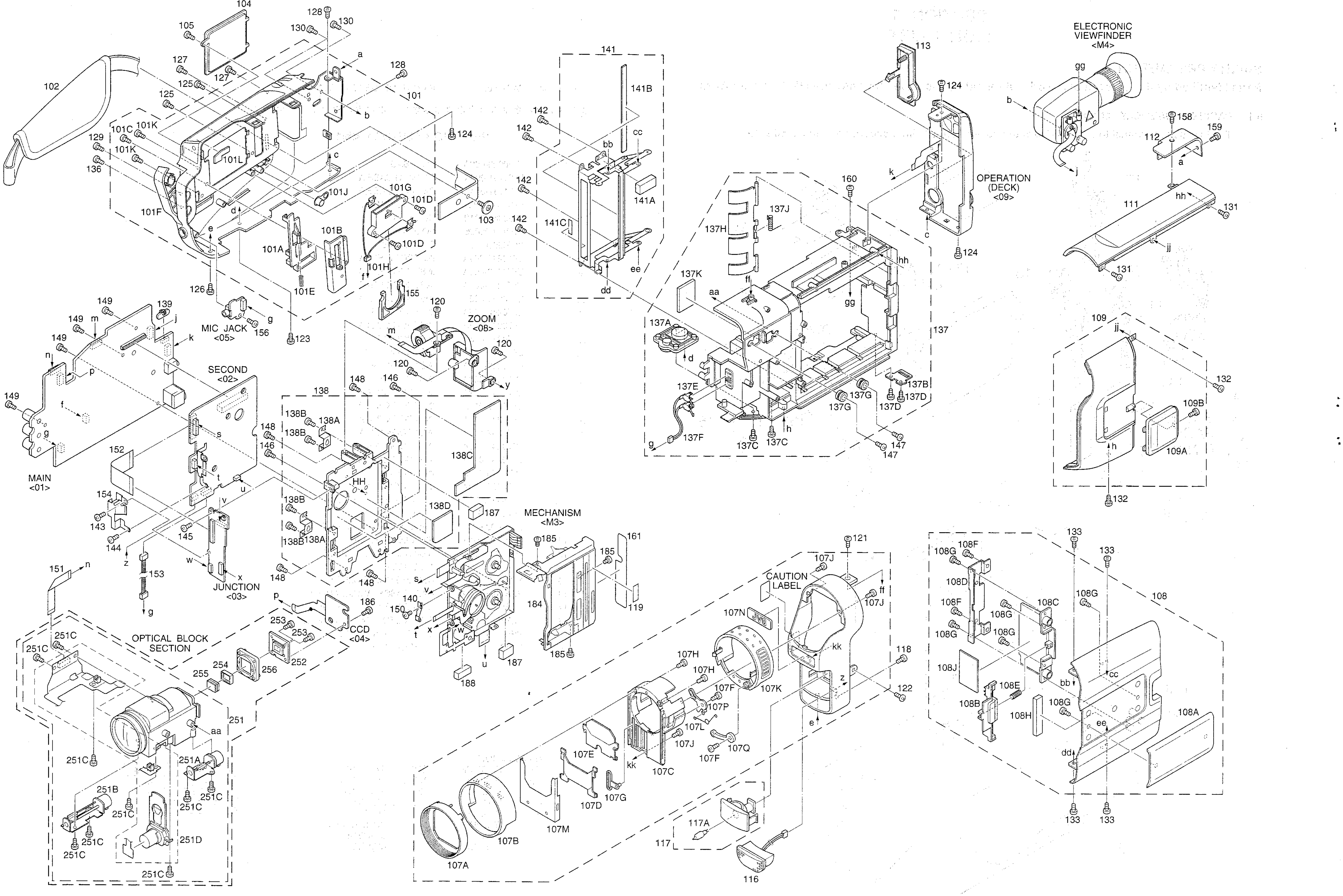
# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		******************************	
		PACKING ASSEMBLY <M1>	
	1	LY30023-002A	POLY BAG
	2	LY31131-003A	PACKING CASE,A
		LY31131-004A	PACKING CASE,B
		LY31131-005A	PACKING CASE,C
	3	LY30965-001B	CUSHION
	4	QPA02003006	POLY BAG,A,C
		YQM30061-3	POLY BAG,B
⚠	5	LYT0242-001A	INST.BOOK(EN),A
⚠		LYT0243-001A	INST.BOOK(EN),B
⚠		LYT0275-001A	INST.BOOK(EN),C
⚠		LYT0242-002A	INST.BOOK(GE),A
⚠		LYT0242-003A	INST.BOOK(FR),A
⚠		LYT0242-004A	INST.BOOK(DU),A
⚠		LYT0242-005A	INST.BOOK(SP),A
⚠		LYT0242-006A	INST.BOOK(IT),A
⚠		LYT0242-007A	INST.BOOK(DA),A
⚠		LYT0242-008A	INST.BOOK(FI),A
⚠		LYT0242-009A	INST.BOOK(SW),A
⚠		LYT0242-010A	INST.BOOK(NO),A
⚠		LYT0242-011A	INST.BOOK(RU),A
⚠		LYT0242-012A	INST.BOOK(CZ),A
⚠		LYT0242-013A	INST.BOOK(PO),A
⚠		LYT0242-014A	INST.BOOK(HU),A
⚠		LYT0275-002A	INST.BOOK(CH),C
⚠		LYT0275-003A	INST.BOOK(AR),C
	8	BT-54008-1	GUARANTEE CARD,A,B
⚠	9	PECA0903	LI BATTERY,X2
	11	LYH30039-001A	CABLE ASSY,DC PLUG CORD
	12	LY20186-001A	SHOULDER STRAP
	13	QAM0004-003	S CABLE,S-VIDEO CABLE
	14	-	TAPE ASSY
	15	YQ20922V	REMOTE CONTROLLER
	16	PEAC0359-150	CABLE ASSY (AUDIO/VIDEO)
	17	PEAC0428-150	CABLE ASSY, EDITING CABLE
	18	PEMC1000-01-02	CONNECTOR CABLE ADAPTER, A
⚠	19	PEMC1012-02	CONVERSION PLUG,C
⚠	20	YU42117	CAUTION SHEET,C

• INSTRUCTIONS

EN .... ENGLISH
GE .... GERMANY
FR .... FRENCH
DU .... DUTCH
SP .... SPANISH
IT .... ITALIAN
DA .... DANISH
FI .... FINNISH
SW .... SWEDISH
NO .... NORWEGIAN
RU .... RUSSIAN
CZ .... CZECH
PO .... POLISH
HU .... HUNGARIAN
CH .... CHINESE
AR .... ARABIC

MODEL	MARK
GR-DVF1EG	A
GR-DVF1EK	B
GR-DVF3A	C

5.2 FINAL ASSEMBLY <M2>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OPTICAL BLOCK
SECTION
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FINAL ASSEMBLY <M2>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	101	LY10122-003C	LOWER CASE ASSY
	101A	LY30885-001C	KNOB(B.RELEASE)
	101B	LY30886-001B	BKT(B.RELEASE)
	101C	QYSLSP2030D	SCREW
	101D	QYSLSF2055D	SPECIAL SCREW,X2
	101E	LY30002-026A	COMPRES. SPRING
	101F	LY30891-001B	CAP(RCA JACK)
	101G	LY30888-001B	HOLDER(LITHIUM)
	101H	WJM0050-001A	E-SI C WIRE C-F
	101J	LY40081-001A	CAP
	101K	QYSLSP2050D	SCREW,X2
	101L	LY41380-001A	SPACER(TALLY)
	102	LY20362-001A	GRIP BELT
	103	LY30018-003A	SPECIAL SCREW
⚠	104	LY30887-001B	CAP(JIG)
	105	QYSLSP2030D	SCREW
⚠	107	LY10124-003C	FRONT COVER ASSY,A,B
⚠		LY10124-012C	FRONT COVER ASSY,C
	107A	LY30893-001B	HOOD
	107B	LY30894-002A	COVER(HOOD)
	107C	LY20349-001B	GUIDE(SHUTTER)
	107D	LY30895-001B	SHUTTER(1)
	107E	LY30896-001A	SHUTTER(2)
	107F	YQ43762	SPECIAL SCREW,X2
	107G	LY41075-001A	SLIDER(SHUTTER)ASSY
	107H	QYSLSF2050Z	SCREW,X2
	107J	QYSLSF2060Z	SCREW,X3
	107K	LY20348-001A	DIAL(SUTTER)
	107L	LY41081-001C	TORSION SPRING
	107M	LY41128-001B	HOLD(SHUTTER)
	107N	LY40987-003A	MARK
	107P	LY41077-001A	LEVER(1)
	107Q	LY41078-001A	LEVER(2)
	108	LY20337-002F	CASS.COVER(F.S)ASSY
	108A	LY30916-002B	PLATE(C.COVER)
	108B	LY30917-002C	KNOB(PUSH)
	108C	LY30935-001B	GUIDE(PUSH)
	108D	LY30936-001B	PLATE(PUSH)
	108E	LY30002-001A	COMPRES. SPRING
	108F	QYSLSF2030D	SCREW,X2
	108G	QYSLSF2040D	SCREW,X6
	108H	LY30016-0J3A	SPACER-A
	108J	LY30016-0J1A	SPACER-A
	109	LY20338-002A	UPPER CASE(F.S)ASSY
	109A	LY30921-002A	PLATE(UPPER)
	109B	QYSLSF2040D	SCREW
	111	LY10129-004B	TOP COVER,A,B
		LY10129-019B	TOP COVER,C
	112	LY20328-001C	COVER(VF)
	113	LY30928-001C	CAP(REAR JACK)
	116	LY30861-003A	MICROPHONE
	117	LY30860-001A	DC LIGHT ASSY
	117A	YQ44266	LAMP
	118	QYSLSF2055D	SPECIAL SCREW
	119	LY40699-002A	LABEL(PUSH)
	120	QYSLSF2055D	SPECIAL SCREW,X3
	121	YQ43762-5	SPECIAL SCREW
	122	QYSLSF2055D	SPECIAL SCREW
	123	QYSLSF2055D	SPECIAL SCREW
	124	QYSLSF2055D	SPECIAL SCREW,X3
	125	QYSLSF2055D	SPECIAL SCREW,X2
	126	QYSLSF2090D	SCREW
	127	QYSLSF2055D	SPECIAL SCREW,X2
	128	QYSLSF2055D	SPECIAL SCREW,X2
	129	QYSLSF2090D	SCREW
	130	QYSLSF2055D	SPECIAL SCREW,X2
	131	QYSLSF2055D	SPECIAL SCREW,X2
	132	QYSLSF2055D	SPECIAL SCREW,X2
	133	LY30018-008A	SPECIAL SCREW,X4
	136	QYSLSF2090D	SCREW
⚠	137	LY20339-001B	FRAME(F)ASSY
	137A	LY30903-001A	BASE
	137B	LY41090-001B	HOOK
	137C	QYSLSF2060D	SCREW,X2
	137D	QYSLSF2060Z	SCREW,X2
	137E	YQ43810-1-1	CONTACT(LIGHT),X2
	137F	WJM0003-002B	E-SI C WIRE C-F
	137G	LY41082-001A	CUSHION(OP),X2
	137H	LY30922-001A	FLAP
	137J	LY41155-001A	T.SPRING(FLAP)
	137K	LY30016-0H2A	SPACER-A
	138	LY30923-001D	HOLDER(M)ASSY
	138A	LY41085-001B	BKT(MECHA),X2
	138B	QYSLSF2040Z	SCREW,X4
	138C	LY41271-001A	SPACER
	138D	LY30016-0H3A	SPACER-A
	139	LY41083-001B	KNOB(LIGHT)
	140	LY40709-001C	BRACKET(GRD)
	141	LY30920-001E	ARM ASSY
	141A	LY30016-0K3A	SPACER-A
	141B	LY30016-0H7A	SPACER-A
	141C	LY30016-0E8A	SPACER-A
	142	QYSLSF2060Z	SCREW,X4
	143	YQ43893-3	MINI SCREW
	144	YQ43893-3	MINI SCREW
	145	QYSLSF2055D	SPECIAL SCREW
	146	LY30019-014A	SPECIAL SCREW,X2
	147	LY30018-050A	SPECIAL SCREW,X2
	148	QYSLSF2055D	SPECIAL SCREW,X4
	149	QYSLSF2055D	SPECIAL SCREW,X4
	150	YQ43893-4	MINI SCREW
	151	WJT0011-001A	E-CARD WIRE,OP-MAIN CN107
	152	QUQ105-3504AA	FFC WIRE
	153	WJN0016-001A	E-SH C WIRE C-C,SECOND-CN303 MIC JACK
	154	LY30971-001A	SHIELD COVER(2)
	155	LY30889-001B	CAP(LITHIUM)
	156	QYSLSF2055D	SPECIAL SCREW
	158	QYSLSF2055D	SPECIAL SCREW
	159	QYSLSF2055D	SPECIAL SCREW
	160	QYSLSF2055D	SPECIAL SCREW
	161	LY40698-002A	LABEL(HOUSING)
	184	LY30483-001K	CASSETTE HOUSING ASSY
	185	YQ43893-4	MINI SCREW,X3
	186	QYSLSP2030D	SCREW
	187	LY30016-0H4A	SPACER-A,X2
	188	LY30016-0H5A	SPACER-A

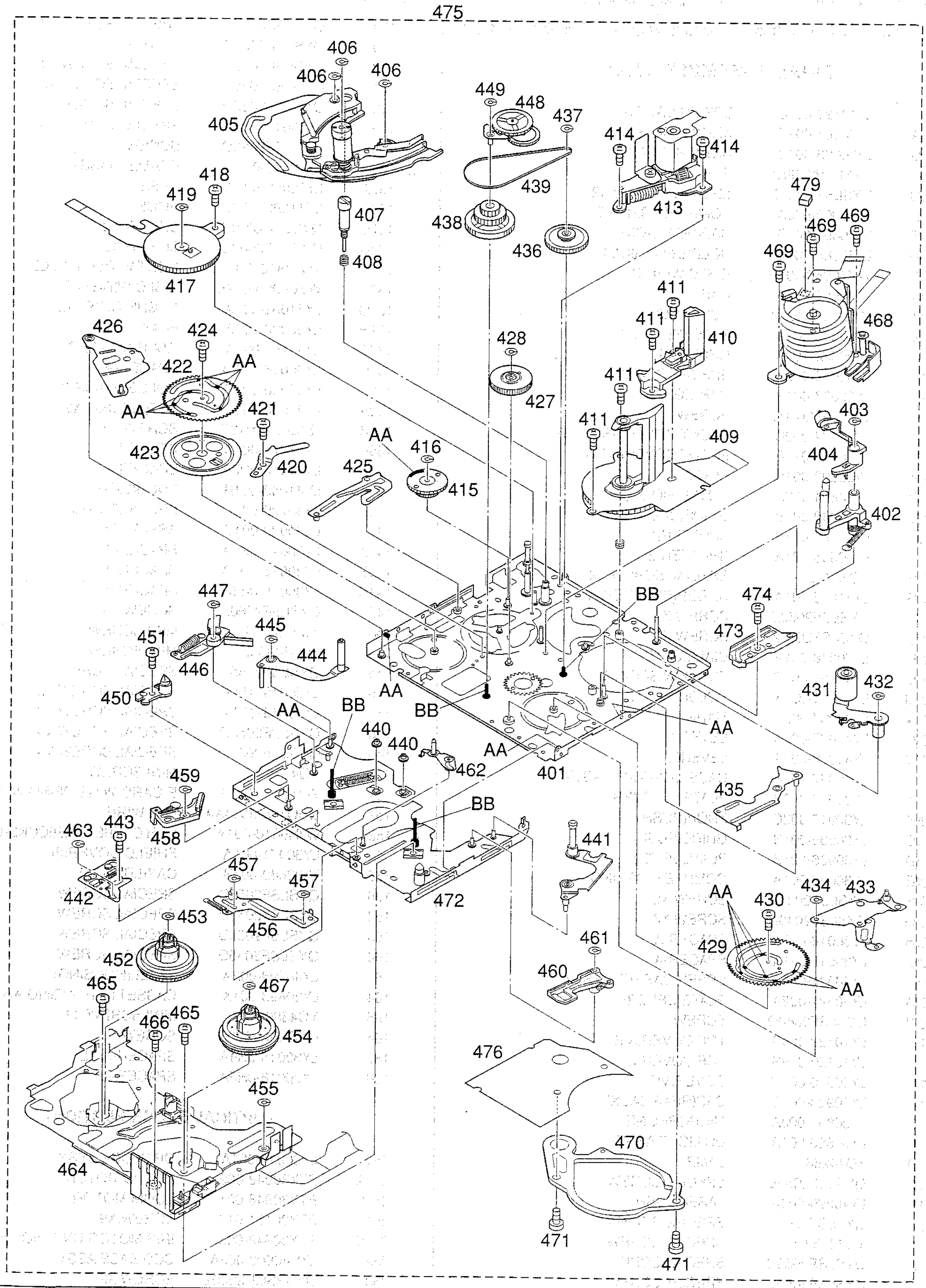
– OPTICAL BLOCK SECTION –

REF No.	PART No.	PART NAME, DESCRIPTION
251	LY30948-001A	OP BLOCK ASSY
251A	PTY30948-002	FOCUS MOTOR
251B	PTY30948-001	ZOOM MOTOR
251C	PTY30151-016	SCREW,X9
251D	PTY30948-006	IRIS MOTOR UNIT,INCLF PC
252	LYH40003-002A	CCD BASE ASSY
253	QYSPSGU2080Z	SCREW,X2
254	LY30296-001A	SPACER RUBBER
255	LY40733-001A	OPTICAL LPF
256	LY20346-001A	CCD SPACER

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.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Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

NOTE: The section marked in AA and BB, indicate lubrication and greasing areas.

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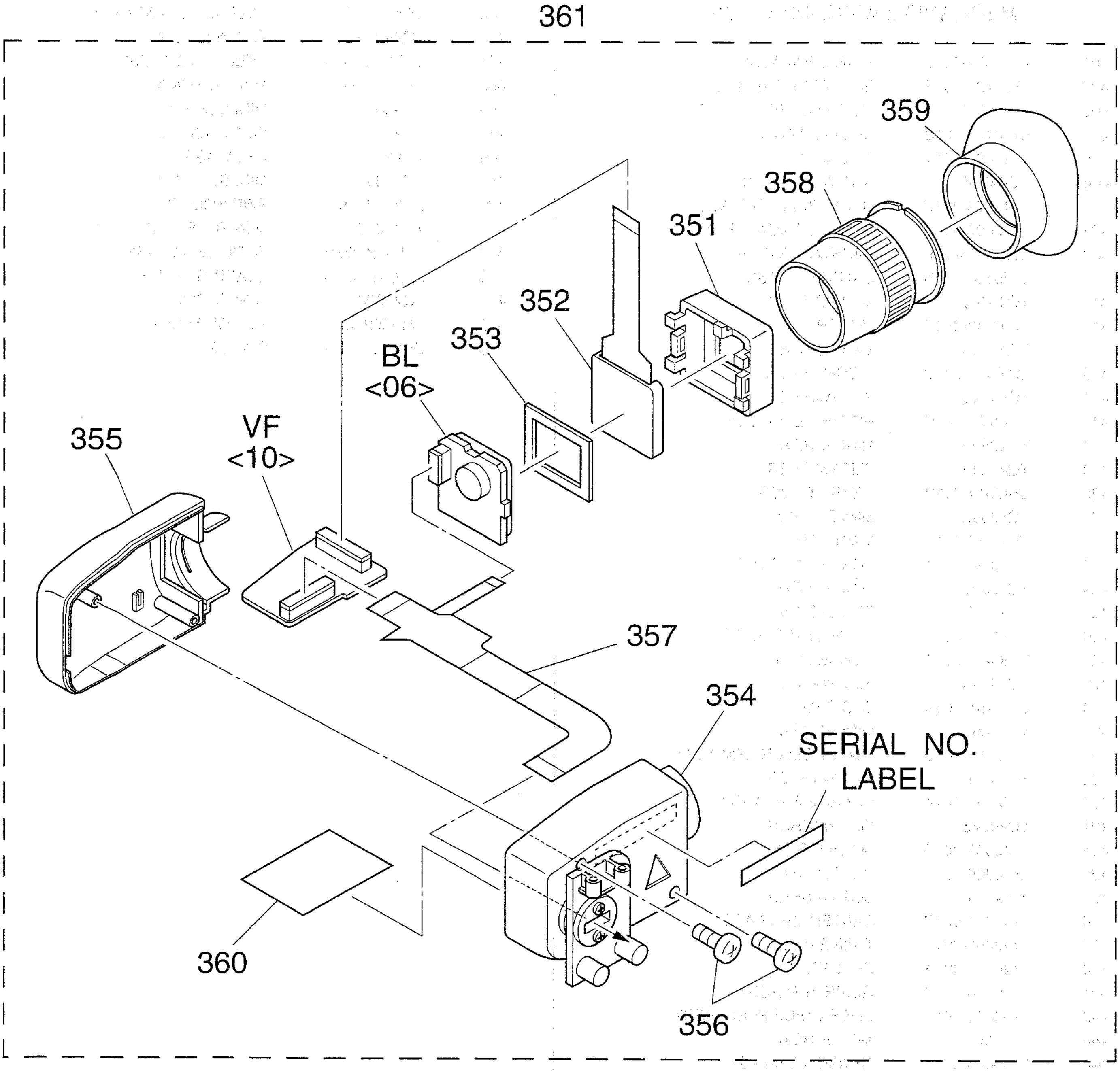
MECHANISM ASSEMBLY <M3>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	LY10077-001G	MAIN DECK ASSY
402	LY30436-001F	SLANT POLE ARM ASSY
403	YQ44246	SLIT WASHER
404	LY30438-001B	CLEANER ARM ASSY
405	LY10080-001J	RAIL ASSY
406	YQ44246	SLIT WASHER,X3
407	LY40353-001C	GUIDE ROLLER(S) ASSY
408	LY30002-006C	COMPRESSION SPRING
409	QAR0026-001	CAPSTAN MOTOR
410	LY30504-001B	CATCHER(T)ASSY
411	YQ43893	MINI SCREW,X4
413	LY30448-001C	MOTOR BKT ASSY
414	YQ43893	MINI SCREW,X2
415	LY30449-001C	WORM WHEEL
416	YQ44246	SLIT WASHER
417	LY40496-001C	ROTARY ENCODER
418	YQ43893	MINI SCREW
419	YQ44246	SLIT WASHER
420	LY40614-001B	GEAR HOLDER
421	YQ43893	MINI SCREW
422	LY30450-001B	MAIN CAM
423	LY30840-001A	BRAKE CTL PLATE
424	YQ43893	MINI SCREW
425	LY40373-001C	TC LEVER ASSY
426	LY30452-001E	SLIDE LEVER ASSY
427	LY30454-001A	CONNECT GEAR
428	YQ44246	SLIT WASHER
429	LY30455-001A	SUB CAM
430	YQ43893	MINI SCREW
431	LY30456-001B	PINCHROLLER ARM ASSY
432	YQ44246	SLIT WASHER
433	LY30459-001A	CHARGE ARM ASSY
434	YQ44246	SLIT WASHER
435	LY40387-001B	BC LEVER ASSY
436	LY40389-001C	R.D.PULLEY ASSY
437	YQ44246-2	SLIT WASHER
438	LY40391-001D	CENTER GEAR ASSY
439	LY40396-001A	TIMING BELT
440	LY40413-001A	COLLAR,X2
441	LY30468-001B	GUIDE ARM ASSY
442	LY30618-001C	SLIDE GUIDE PLATE ASSY
443	YQ43893-2	MINI SCREW
444	LY40420-001H	TENSION ARM ASSY
445	YQ44246	SLIT WASHER
446	LY30471-001D	PAD ARM ASSY
447	YQ44246	SLIT WASHER
448	LY40432-001E	IDLER ARM ASSY
449	YQ44246-2	SLIT WASHER
450	LY30476-001A	GUIDE PIN(SUPPLY)
451	YQ43893	MINI SCREW
452	LY40441-001B	REEL DISK (SUPPLY) ASSY
453	YQ44246	SLIT WASHER
454	LY40443-001B	REEL DISK(TAKE-UP)ASSY
455	YQ44246	SLIT WASHER
456	LY30477-001D	CTL PLATE ASSY
457	YQ44246	SLIT WASHER,X2
458	LY40444-001E	LOADING BRAKE ASSY
459	YQ44246	SLIT WASHER
460	LY40452-001A	SUB BRAKE ASSY
461	YQ44246	SLIT WASHER
462	LY30479-001B	RELEASE GUIDE ASSY
463	YQ44246	SLIT WASHER
464	LY20146-001E	REEL COVER ASSY
465	YQ43893-4	MINI SCREW,X2
466	YQ43893	MINI SCREW
467	YQ44246	SLIT WASHER
468	YDV2086D	DRUM ASSY
469	YQ43893	MINI SCREW,X3
470	LY20138-001C	PWB HOLDER
471	YQ43893	MINI SCREW,X2
472	LY10082-001H	SLIDE DECK ASSY
473	LY30462-001A	LOADING GUIDE
474	YQ43893	MINI SCREW
475	YMA0025C	MECHA(A) ASSY
476	LY41109-001A	SHIELD

5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4>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LABEL
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ELECTRONIC VIEWFINDER ASSEMBLY <M4>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		351	LY20336-001B	HOLDER(LCD)
		352	LY40127-001A	SPACER(LCD.)
		353	QLD0056-001	LCD MODULE
		354	LY30914-001A	BOTTOM CASE ASSY,C
			LY30914-002C	BOTTOM CASE ASSY,A,B
	⚠	355	LY30915-001A	TOP CASE ASSY,C
	⚠		LY30915-001C	TOP CASE ASSY,A,B
		356	QYSPSGT1760D	SCREW,X2
		357	QAL0136-003	FPC
		358	PTY20307-200	LENS ASSY
		359	PTY20307-201	EYE CAP
		360	LY30016-0M7A	SPACER-A
	⚠	361	LYH20038-003A	E.VF ASSY,A,B
	⚠		LYH20038-004A	E.VF ASSY,C

5.5 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <01>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		PW1	YB10233E1-02	MAIN BOARD ASSY,A,B
			YB10233K1-02	MAIN BOARD ASSY,C
		IC1001	MN102F1617HL-12	IC(MICRO C ROM)
			or MN1021617FB	IC(MICRO C ROM)
		IC1002	UPD6461GS-926-X	IC
		IC1003	X25057M8-2.7-X	IC
		IC1004	RS5C314	IC
		IC1005	TC74HC04AF	IC
		IC1006	TC74HC08AF	IC
		IC1007	TC74HC32AF	IC
	⚠	IC1009	S-8423SFS-X	IC
	⚠		or S-8423SFT-X	IC
		IC1010	TC7S66F	IC
		IC1401	M31020MA-132VP	IC
			or M31020EA-132VP	IC
		IC1402	TC7W14F	IC(DIGITAL)
		IC1801	PIC-26043S	IR DETECT UNIT
		IC1802	BA10358F	IC
		IC3001	MN67373	IC(DIGITAL)
		IC3002	MN47V07AF	IC
		IC3003	M65500FP	IC(DIGITAL)
		IC3004	MN41V4260TT-A07	IC(DIGITAL)
			or M5M4V4260CTP-7V	IC
		IC3005	AD9057BRS-60-X	IC
		IC3201	BH7086KV	IC(DIGITAL)
		IC3202	T9P74EF	IC(DIGITAL)
		IC3501	AN3741FAP-A	IC(DIGITAL)
		IC3503	MB88345PF	IC
		IC3701	NJM2538V	IC
		IC3703	S-81235SG-QI-X	IC
		IC4201	MN6577F	IC
		IC4301	JCY0112-2	IC
		IC4302	TMS4C2973-28-X	IC
		IC4801	BA10324AF-XE	IC
		IC4802	UPC358G2/5/-W	IC
		IC4851	UPD16835G3	IC
		IC5501	UPD16510GR	IC
		IC5502	JCY0092	IC
		IC5503	TC7SH04FU	IC(DIGITAL)
		IC5601	AN2108NFHQ	IC
		IC5602	MM1385AN	IC
		IC6001	FA3621F	IC
		IC6002	MM1257AM	IC
		IC7101	TC7SET02F	IC
		IC7102	TC7SET08F	IC
		Q1001	DTC143XE	TRANSISTOR
		Q1003	DTC124EE	TRANSISTOR
		Q1004	DTC124EE	TRANSISTOR
		Q1401	DTA114EE	TRANSISTOR
		Q1402	DTC114EE	TRANSISTOR
		Q1403	DTC114EE	TRANSISTOR
		Q1405	DTC144EE	TRANSISTOR
		Q1406	DTA114EE	TRANSISTOR
		Q1407	DTC144EE	TRANSISTOR
		Q1408	DTA114EE	TRANSISTOR
		Q1801	RPM-22PB	PHOTO TRANSISTOR
		Q1802	DTC143XE	TRANSISTOR
		Q3201	2SC4617/QRS/-X	TRANSISTOR
			or 2SC4738/YG/-X	TRANSISTOR
		Q3202	2SC4617/QRS/-X	TRANSISTOR
			or 2SC4738/YG/-X	TRANSISTOR
		Q3204	2SC4617/QRS/-X	TRANSISTOR
			or 2SC4738/YG/-X	TRANSISTOR
		Q3501	2SC4226/4/-X	TRANSISTOR
		Q3502	DTC124XE	TRANSISTOR
		Q3503	2SC4617/QRS/-X	TRANSISTOR
		Q3504	2SA1774/QRS/-X	TRANSISTOR
		Q3511	2SA1774/QRS/-X	TRANSISTOR
		Q3512	DTC144EE	TRANSISTOR
			or RN1104	TRANSISTOR
		Q3513	UMZ1N	PAIR TRANSISTOR
		Q3701	DTC144EE	TRANSISTOR
		Q3705	2SA1774/QRS/-X	TRANSISTOR
			or 2SA1832/YG/-X	TRANSISTOR
		Q3706	2SA1774/QRS/-X	TRANSISTOR
			or 2SA1832/YG/-X	TRANSISTOR
		Q3707	2SA1774/QRS/-X	TRANSISTOR
			or 2SA1832/YG/-X	TRANSISTOR
		Q4301	2SA1790/BC/-X	TRANSISTOR
		Q4801	2SC4617/QR/-X	TRANSISTOR
		Q4851	2SA1577/RS/-X	TRANSISTOR
		Q4852	DTC144EE	TRANSISTOR
		Q6001	MPL1	TRANSISTOR
		Q6002	MPL1	TRANSISTOR
		Q6003	MPL1	TRANSISTOR
		Q6004	2SJ511	MOS FET
		Q6005	MPL1	TRANSISTOR
		Q6006	2SJ511	MOS FET
		Q6007	2SC4617/QR/-X	TRANSISTOR
		Q6008	2SA1774/QR/-X	TRANSISTOR
		Q6010	2SC4617/QR/-X	TRANSISTOR
		Q6011	2SB1121/ST/-X	TRANSISTOR
			or 2SB1188(QR)	TRANSISTOR
		Q6013	2SA1774/QR/-X	TRANSISTOR
		Q6014	2SB1121/ST/-X	TRANSISTOR
			or 2SB1188(QR)	TRANSISTOR
		Q6016	2SC4617/QR/-X	TRANSISTOR
		Q6017	2SA1774/QR/-X	TRANSISTOR
		Q6018	DTA114EE	TRANSISTOR
		Q6019	DTC144EE	TRANSISTOR
		Q6201	2SB1121/ST/-X	TRANSISTOR
			or 2SB1188(QR)	TRANSISTOR
		Q6202	2SC4617/QR/-X	TRANSISTOR
		Q6203	2SB1121/ST/-X	TRANSISTOR
			or 2SB1188(QR)	TRANSISTOR
		D501	MA8068	ZENER DIODE
		D502	MA8068	ZENER DIODE
	⚠	D1001	MA704	SB DIODE
		D1002	DAN222	DIODE
		D1003	UDZS7.5B	ZENER DIODE
		D1801	TLSU1002/LM/-X	LE DIODE
		D3701	DTZ6.8	ZENER DIODE
		D3702	DTZ6.8	ZENER DIODE
		D3703	DTZ6.8	ZENER DIODE
		D5501	1SS355	DIODE
		D6001	U1FWJ44N	SB DIODE
		D6002	1SS355	DIODE
		D6004	1SS355	DIODE

⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D6011	1SS355	DIODE	
D6012	1SS355	DIODE	
D6013	MA8033	ZENER DIODE	
D7101	SB007W03Q	SB DIODE	
R501	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R503	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R504	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1001	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1003	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1004	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1005	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R1006	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1007	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1008	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R1010	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1012	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1013	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1014	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1015	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1016	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1017	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1018	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1019	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1020	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1021	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1025	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1026	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1030	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1031	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1032	NRSA63J-224X	MG RESISTOR	220k ,1/16W
R1033	NRSA63J-334X	MG RESISTOR	330k ,1/16W
R1034	NRSA63J-153X	MG RESISTOR	15k ,1/16W
R1035	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1036	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R1037	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1038	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1039	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1040	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R1041	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R1044	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R1045	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R1046	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1048	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1050	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1051	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1054	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1055	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R1056	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R1057	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1059	NRVA63D-153X	CMF RESISTOR	15k ,1/16W
R1060	NRVA63D-823X	CMF RESISTOR	82k ,1/16W
R1061	NRSA63J-681X	MG RESISTOR	680 ,1/16W
R1062	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1063	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1064	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1065	NRVA63D-473X	CMF RESISTOR	47k ,1/16W
R1066	NRSA63J-563X	MG RESISTOR	56k ,1/16W
R1067	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1069	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1070	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1071	NRSA63J-104X	MG RESISTOR	100k ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1072	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1074	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1076	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1078	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1081	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1403	NRSA63J-105X	MG RESISTOR	1M ,1/16W
R1404	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R1405	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1406	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1407	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1408	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1409	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1410	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1411	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1412	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1413	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1414	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1415	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R1417	NRSA63J-753X	MG RESISTOR	75k ,1/16W
R1418	NRSA63J-334X	MG RESISTOR	330k ,1/16W
R1419	NRSA63J-561X	MG RESISTOR	560 ,1/16W
R1420	NRSA63J-152X	MG RESISTOR	1.5k ,1/16W
R1421	NRVA63D-123X	CMF RESISTOR	12k ,1/16W
R1422	NRVA63D-123X	CMF RESISTOR	12k ,1/16W
R1423	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1424	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1425	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1426	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R1427	NRVA63D-683X	CMF RESISTOR	68k ,1/16W
R1428	NRVA63D-683X	CMF RESISTOR	68k ,1/16W
R1429	NRSA63J-820X	MG RESISTOR	82 ,1/16W
R1430	NRVA63D-101X	CMF RESISTOR	100 ,1/16W
R1431	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1432	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1433	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R1434	NRSA63J-122X	MG RESISTOR	1.2k ,1/16W
R1435	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R1801	NRSA63J-302X	MG RESISTOR	3k ,1/16W
R1802	NRSA63J-181X	MG RESISTOR	180 ,1/16W
R1803	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R1805	NRSA63J-182X	MG RESISTOR	1.8k ,1/16W
R1806	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1807	NRSA63J-684X	MG RESISTOR	680k ,1/16W
R1808	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R1809	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1810	NRSA63J-824X	MG RESISTOR	820k ,1/16W
R1811	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R1812	NRSA63J-683X	MG RESISTOR	68k ,1/16W
R1813	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R1814	NRSA63J-822X	MG RESISTOR	8.2k ,1/16W
R2151	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R2152	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R2154	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3002	NRSA63J-105X	MG RESISTOR	1M ,1/16W
R3003	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3004	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3005	NRSA63J-105X	MG RESISTOR	1M ,1/16W
R3006	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3007	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R3008	NRSA63J-471X	MG RESISTOR	470 ,1/16W
R3009	NRSA63J-471X	MG RESISTOR	470 ,1/16W

# △ REF No.	PART No.	PART NAME, DESCRIPTION	
R3010	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R3011	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R3012	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3013	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R3014	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3015	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3016	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3017	NRSA63J-682X	MG RESISTOR	6.8k ,1/16W
R3018	NRSA63J-152X	MG RESISTOR	1.5k ,1/16W
R3019	NRSA63J-224X	MG RESISTOR	220k ,1/16W
R3020	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3021	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3022	NRSA63J-124X	MG RESISTOR	120k ,1/16W
R3028	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3029	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3030	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3031	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3032	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3033	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3034	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3035	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3036	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3037	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3038	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3039	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3041	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3042	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3205	NRSA63J-121X	MG RESISTOR	120 ,1/16W
R3206	NRSA63J-682X	MG RESISTOR	6.8k ,1/16W
R3207	NRSA63J-332X	MG RESISTOR	3.3k ,1/16W
R3208	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R3209	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3210	NRVA63D-223X	CMF RESISTOR	22k ,1/16W
R3211	NRVA63D-183X	CMF RESISTOR	18k ,1/16W
R3212	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3217	NRSA63J-123X	MG RESISTOR	12k ,1/16W
R3218	NRSA63J-123X	MG RESISTOR	12k ,1/16W
R3219	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3220	NRSA63J-153X	MG RESISTOR	15k ,1/16W
R3221	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3222	NRSA63J-153X	MG RESISTOR	15k ,1/16W
R3224	NRSA63J-105X	MG RESISTOR	1M ,1/16W
R3225	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3226	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3227	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3228	NRSA63J-105X	MG RESISTOR	1M ,1/16W
R3229	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3230	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3234	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3235	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3237	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3238	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3241	NRSA63J-823X	MG RESISTOR	82k ,1/16W
R3502	NRSA63J-181X	MG RESISTOR	180 ,1/16W
R3503	NRSA63J-301X	MG RESISTOR	300 ,1/16W
R3504	NRSA63J-391X	MG RESISTOR	390 ,1/16W
R3505	NRSA63J-152X	MG RESISTOR	1.5k ,1/16W
R3507	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R3508	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3509	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3510	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R3513	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3514	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3515	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3516	NRSA63J-562X	MG RESISTOR	5.6k ,1/16W
R3517	NRSA63J-683X	MG RESISTOR	68k ,1/16W
R3518	NRSA63J-331X	MG RESISTOR	330 ,1/16W
R3519	NRSA63J-562X	MG RESISTOR	5.6k ,1/16W
R3520	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R3521	NRSA63J-391X	MG RESISTOR	390 ,1/16W
R3522	NRSA63J-121X	MG RESISTOR	120 ,1/16W
R3523	NRSA63J-121X	MG RESISTOR	120 ,1/16W
R3524	NRSA63J-121X	MG RESISTOR	120 ,1/16W
R3525	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3526	NRSA63J-822X	MG RESISTOR	8.2k ,1/16W
R3527	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R3528	NRSA63J-221X	MG RESISTOR	220 ,1/16W
R3529	NRSA63J-562X	MG RESISTOR	5.6k ,1/16W
R3530	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3533	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R3534	NRSA63J-563X	MG RESISTOR	56k ,1/16W
R3535	NRSA63J-564X	MG RESISTOR	560k ,1/16W
R3536	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3537	NRSA63J-561X	MG RESISTOR	560 ,1/16W
R3538	NRSA63J-224X	MG RESISTOR	220k ,1/16W
R3539	NRSA63J-680X	MG RESISTOR	68 ,1/16W
R3540	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R3541	NRSA63J-392X	MG RESISTOR	3.9k ,1/16W
R3564	NRSA63J-124X	MG RESISTOR	120k ,1/16W
R3565	NRSA63J-563X	MG RESISTOR	56k ,1/16W
R3566	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R3567	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3568	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3703	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R3704	NRSA63J-224X	MG RESISTOR	220k ,1/16W
R3705	NRSA63J-121X	MG RESISTOR	120 ,1/16W
R3706	NRSA63J-225X	MG RESISTOR	2.2M ,1/16W
R3707	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R3708	NRSA63J-121X	MG RESISTOR	120 ,1/16W
R3709	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3712	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R3714	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3715	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R3716	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R3717	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3718	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R3719	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R3720	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3731	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R3732	NRSA63J-680X	MG RESISTOR	68 ,1/16W
R3733	NRSA63J-680X	MG RESISTOR	68 ,1/16W
R3734	NRSA63J-680X	MG RESISTOR	68 ,1/16W
R3735	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R4301	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4302	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R4303	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4304	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R4305	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4314	NRSA63J-331X	MG RESISTOR	330 ,1/16W
R4315	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4802	NRSA63J-105X	MG RESISTOR	1M ,1/16W
R4804	NRSA63J-105X	MG RESISTOR	1M ,1/16W

△ REF No.	PART No.	PART NAME, DESCRIPTION	
R4805	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R4806	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R4808	NRSA63J-243X	MG RESISTOR	24k ,1/16W
R4809	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R4810	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R4811	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R4812	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R4813	NRSA63J-391X	MG RESISTOR	390 ,1/16W
R4814	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R4815	NRSA63J-683X	MG RESISTOR	68k ,1/16W
R4816	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4817	NRSA63J-334X	MG RESISTOR	330k ,1/16W
R4818	NRSA63J-154X	MG RESISTOR	150k ,1/16W
R4819	NRSA63J-152X	MG RESISTOR	1.5k ,1/16W
R4820	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R4821	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4822	NRSA63J-333X	MG RESISTOR	33k ,1/16W
R4823	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R4829	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R4830	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4833	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4834	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4854	NRSA63J-202X	MG RESISTOR	2k ,1/16W
R4855	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R4856	NRSA63J-8R2X	MG RESISTOR	8.2 ,1/16W
R4857	NRSA63J-8R2X	MG RESISTOR	8.2 ,1/16W
R4858	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4861	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R4862	NRSA63J-8R2X	MG RESISTOR	8.2 ,1/16W
R4863	NRSA63J-8R2X	MG RESISTOR	8.2 ,1/16W
R4864	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4865	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4866	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4867	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4868	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4869	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4870	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R4871	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R5501	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R5502	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R5503	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R5504	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R5505	NRSA63J-333X	MG RESISTOR	33k ,1/16W
R5506	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R5507	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R5508	NRSA63J-220X	MG RESISTOR	22 ,1/16W
R5512	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R5514	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R5515	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R5516	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R5517	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R5520	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R5610	NRSA63J-823X	MG RESISTOR	82k ,1/16W
R5611	NRSA63J-123X	MG RESISTOR	12k ,1/16W
R5614	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R5619	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R6001	NRVA63D-622X	CMF RESISTOR	6.2k ,1/16W
R6002	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R6003	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R6004	NRSA63J-154X	MG RESISTOR	150k ,1/16W
R6005	NRVA63D-114X	CMF RESISTOR	110k ,1/16W
R6006	NRVA63D-104X	CMF RESISTOR	100k ,1/16W
R6007	NRSA63J-154X	MG RESISTOR	150k ,1/16W
R6008	NRSA63J-471X	MG RESISTOR	470 ,1/16W
R6009	NRVA63D-363X	CMF RESISTOR	36k ,1/16W
R6010	NRSA63J-562X	MG RESISTOR	5.6k ,1/16W
R6011	NRSA63J-471X	MG RESISTOR	470 ,1/16W
R6012	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R6013	NRSA63J-562X	MG RESISTOR	5.6k ,1/16W
R6014	NRSA63J-682X	MG RESISTOR	6.8k ,1/16W
R6015	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R6016	NRSA63J-823X	MG RESISTOR	82k ,1/16W
R6017	NRSA63J-682X	MG RESISTOR	6.8k ,1/16W
R6018	NRVA63D-133X	CMF RESISTOR	13k ,1/16W
R6019	NRVA63D-363X	CMF RESISTOR	36k ,1/16W
R6020	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R6021	NRSA63J-152X	MG RESISTOR	1.5k ,1/16W
R6022	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R6023	NRSA63J-471X	MG RESISTOR	470 ,1/16W
R6024	NRVA63D-363X	CMF RESISTOR	36k ,1/16W
R6025	NRVA63D-912X	CMF RESISTOR	9.1k ,1/16W
R6026	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R6027	NRVA63D-223X	CMF RESISTOR	22k ,1/16W
R6028	NRVA63D-113X	CMF RESISTOR	11k ,1/16W
R6029	NRSA63J-471X	MG RESISTOR	470 ,1/16W
R6030	NRVA63D-123X	CMF RESISTOR	12k ,1/16W
R6031	NRVA63D-103X	CMF RESISTOR	10k ,1/16W
R6032	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R6033	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R6034	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R6035	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R6036	NRVA63D-392X	CMF RESISTOR	3.9k ,1/16W
R6037	NRVA63D-563X	CMF RESISTOR	56k ,1/16W
R6043	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R6044	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R6045	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R6046	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R6047	NRSA63J-470X	MG RESISTOR	47 ,1/16W
R6049	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R6050	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R6056	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R6058	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R6059	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R6060	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R6061	NRSA63J-561X	MG RESISTOR	560 ,1/16W
R6062	NRSA63J-153X	MG RESISTOR	15k ,1/16W
R6063	NRSA63J-153X	MG RESISTOR	15k ,1/16W
R6201	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R6202	NRSA63J-561X	MG RESISTOR	560 ,1/16W
R6203	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R6204	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R7102	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R7103	NRSA63J-563X	MG RESISTOR	56k ,1/16W
R7106	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R7107	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R7108	NRVA63D-182X	CMF RESISTOR	1.8k ,1/16W
R7109	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R7111	NRVA63D-332X	CMF RESISTOR	3.3k ,1/16W
R7112	NRSA63J-561X	MG RESISTOR	560 ,1/16W
R7113	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R7115	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
RA1001	NRZ0038-102X	NETWORK RESISTOR	1k

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
RA1002	NRZ0038-102X	NETWORK RESISTOR	1k
RA1003	NRZ0038-104X	NETWORK RESISTOR	100k
RA1004	NRZ0038-104X	NETWORK RESISTOR	100k
RA1005	NRZ0038-102X	NETWORK RESISTOR	1k
RA1006	NRZ0038-102X	NETWORK RESISTOR	1k
RA1401	NRZ0040-102X	NETWORK RESISTOR	1k
RA1402	NRZ0040-102X	NETWORK RESISTOR	1k
RA1403	NRZ0040-473X	NETWORK RESISTOR	47k
C1003	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1005	NDC31HJ-330X	CAPACITOR	33pF,50V
C1006	NDC31HJ-270X	CAPACITOR	27pF,50V
C1008	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1009	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1010	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1011	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1012	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1013	NDC31HJ-100X	CAPACITOR	10pF,50V
C1015	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1016	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1018	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1021	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1022	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1023	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1024	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1025	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1026	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1029	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1030	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1031	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1032	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1033	NEA71CM-226X	E CAPACITOR	22μF,16V
C1034	NEA71CM-226X	E CAPACITOR	22μF,16V
C1035	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1036	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1037	NCF31HZ-103X	CAPACITOR	0.01μF,50V
C1401	NEA71CM-106X	E CAPACITOR	10μF,16V
C1402	NEA71CM-106X	E CAPACITOR	10μF,16V
C1403	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1404	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1405	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1406	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1407	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1408	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1409	NDC31HJ-180X	CAPACITOR	18pF,50V
C1410	NDC31HJ-180X	CAPACITOR	18pF,50V
C1411	NCB31CK-223X	CAPACITOR	0.022μF,16V
C1412	NCB31CK-223X	CAPACITOR	0.022μF,16V
C1413	NCB31CK-223X	CAPACITOR	0.022μF,16V
C1414	NCB31CK-223X	CAPACITOR	0.022μF,16V
C1415	NEA71CM-106X	E CAPACITOR	10μF,16V
C1801	NBE41AM-106X	T CAPACITOR	10μF,10V
C1803	NBP21DM-225X	T CAPACITOR	2.2μF,20V
C1804	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1805	NCB31EK-153X	CAPACITOR	0.015μF,25V
C1806	NCB31EK-153X	CAPACITOR	0.015μF,25V
C1808	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2153	NDC31HJ-101X	CAPACITOR	100pF,50V
C2154	NDC31HJ-101X	CAPACITOR	100pF,50V
C3001	NDC31HJ-6R0X	CAPACITOR	6pF,50V
C3002	NDC31HJ-6R0X	CAPACITOR	6pF,50V
C3003	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3004	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3005	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3006	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3007	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3008	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3009	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3010	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3011	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3012	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3013	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3015	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3016	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3017	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3018	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3019	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3021	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3022	NBE20GM-226X	T CAPACITOR	22μF,4.0V
C3023	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3024	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3025	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3026	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3027	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3028	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3029	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3030	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3031	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3032	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3033	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3034	NEA70JM-107X	E CAPACITOR	100μF,6.3V
C3035	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3036	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3037	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3038	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3039	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3040	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3202	NDC31HJ-101X	CAPACITOR	100pF,50V
C3203	NCB21AK-105X	CAPACITOR	1μF,10V
C3204	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3205	NDC31HJ-101X	CAPACITOR	100pF,50V
C3206	NDC31HJ-100X	CAPACITOR	10pF,50V
C3207	NDC31HJ-150X	CAPACITOR	15pF,50V
C3208	NCB21AK-105X	CAPACITOR	1μF,10V
C3209	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3210	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3213	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3216	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3217	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3218	NBE20JM-226X	T CAPACITOR	22μF,6.3V
C3219	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3220	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3221	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3222	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3223	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3224	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3225	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3226	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3227	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3228	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3229	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3230	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3231	NCF31CZ-104X	CAPACITOR	0.1μF,16V

⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3232	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3234	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3235	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3236	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3238	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3239	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3240	NCF21CZ-105X	CAPACITOR	1µF,16V
C3241	NCF21CZ-105X	CAPACITOR	1µF,16V
C3243	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3244	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3501	NDC31HJ-220X	CAPACITOR	22pF,50V
C3502	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3503	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3505	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3506	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3507	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3508	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3509	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3510	NCB31HK-681X	CAPACITOR	680pF,50V
C3511	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3512	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3513	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3514	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3515	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3516	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3517	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3518	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3519	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3520	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3521	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3522	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3523	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3524	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3525	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3526	NCB31CK-273X	CAPACITOR	0.027µF,16V
C3527	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3528	NCB21AK-105X	CAPACITOR	1µF,10V
C3529	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3531	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3532	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3533	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3534	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3537	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3538	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3539	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3540	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3541	NDC31HJ-331X	CAPACITOR	330pF,50V
C3542	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3543	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3544	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C3545	NCB21CK-474X	CAPACITOR	0.47µF,16V
C3546	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3547	NCB21CK-104X	CAPACITOR	0.1µF,16V
C3579	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3580	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3581	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3582	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3702	NBE20JM-226X	T CAPACITOR	22µF,6.3V
C3704	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3705	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3706	NBE20JM-106X	T CAPACITOR	10µF,6.3V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3707	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3708	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3709	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3710	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C3711	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3712	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3713	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3714	NDC31HJ-330X	CAPACITOR	33pF,50V
C3715	NDC31HJ-330X	CAPACITOR	33pF,50V
C3716	NDC31HJ-220X	CAPACITOR	22pF,50V
C3720	NEA70JM-107X	E CAPACITOR	100µF,6.3V
C3721	NEA70JM-226X	E CAPACITOR	22µF,6.3V
C3722	NEA70JM-226X	E CAPACITOR	22µF,6.3V
C3723	NEA70JM-107X	E CAPACITOR	100µF,6.3V
C3724	NCB21AK-105X	CAPACITOR	1µF,10V
C3725	NCB21AK-105X	CAPACITOR	1µF,10V
C4201	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4202	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4203	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4204	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4205	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4206	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4207	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4208	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4209	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4210	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4211	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4212	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4213	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4214	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4215	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4301	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4302	NBE20GM-336X	T CAPACITOR	33µF,4.0V
C4304	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4305	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4306	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4307	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4309	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4310	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4311	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4312	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4314	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4315	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4317	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4323	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4324	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4325	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4326	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4801	NBE41AM-106X	T CAPACITOR	10µF,10V
C4802	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4805	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4806	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4808	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4809	NCF21CZ-105X	CAPACITOR	1µF,16V
C4810	NCB21EK-104X	CAPACITOR	0.1µF,25V
C4812	NCF21CZ-105X	CAPACITOR	1µF,16V
C4813	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4816	NCB21CK-104X	CAPACITOR	0.1µF,16V
C4851	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4852	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4853	NEAB1CM-226X	E CAPACITOR	22µF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C4854	NBP41CM-156X	T CAPACITOR	15µF,16V
C4855	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4858	NDC31HJ-330X	CAPACITOR	33pF,50V
C4859	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4860	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4861	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4862	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4863	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4864	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4865	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5501	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5502	NBP81CM-225X	T CAPACITOR	2.2µF,16V
C5503	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5504	NBP81DM-155X	T CAPACITOR	1.5µF,20V
C5506	NBP21VM-105X	T CAPACITOR	1µF,35V
C5508	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5510	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5511	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5512	NBE50GM-107X	T CAPACITOR	100µF,4.0V
C5513	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5514	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5515	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5516	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5518	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5519	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5520	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5521	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5522	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C5523	NCB21CK-104X	CAPACITOR	0.1µF,16V
C5601	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5602	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C5603	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5605	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5606	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5607	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5608	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5611	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5612	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5613	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5614	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5615	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5616	NCF31AZ-105X	CAPACITOR	1µF,10V
C5617	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5618	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5619	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5624	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5625	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5626	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5627	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6001	NCB11CK-105X	CAPACITOR	1µF,16V
C6002	NCB11CK-105X	CAPACITOR	1µF,16V
C6003	NDC31HJ-391X	CAPACITOR	390pF,50V
C6004	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6005	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6007	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6008	NCB21AK-105X	CAPACITOR	1µF,10V
C6009	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6010	NCB31HK-562X	CAPACITOR	0.0056µF,50V
C6011	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6012	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6013	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6014	NCB31AK-224X	CAPACITOR	0.22µF,10V
C6015	NCB31AK-224X	CAPACITOR	0.22µF,10V
C6017	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6018	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6019	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6020	NCF21CZ-105X	CAPACITOR	1µF,16V
C6021	NEA71CM-106X	E CAPACITOR	10µF,16V
C6022	NCB11CK-105X	CAPACITOR	1µF,16V
C6023	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C6024	NCB11CK-105X	CAPACITOR	1µF,16V
C6025	NCB11CK-105X	CAPACITOR	1µF,16V
C6026	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C6027	NCB11CK-105X	CAPACITOR	1µF,16V
C6028	NCB21CK-224X	CAPACITOR	0.22µF,16V
C6029	NCB21CK-224X	CAPACITOR	0.22µF,16V
C6030	NCB11CK-105X	CAPACITOR	1µF,16V
C6031	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C6032	NCB10JK-106X	CAPACITOR	10µF,6.3V
C6033	NDC31HJ-471X	CAPACITOR	470pF,50V
C6034	NBP41DM-475X	T CAPACITOR	4.7µF,20V
C6035	NCF21CZ-105X	CAPACITOR	1µF,16V
C6036	NCB11CK-105X	CAPACITOR	1µF,16V
C6037	NCF21CZ-105X	CAPACITOR	1µF,16V
C6038	NCB11CK-105X	CAPACITOR	1µF,16V
C6040	NCB11CK-105X	CAPACITOR	1µF,16V
C6041	NDC31HJ-221X	CAPACITOR	220pF,50V
C6042	NCB11CK-105X	CAPACITOR	1µF,16V
C6043	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C6044	NCB11AK-475X	CAPACITOR	4.7µF,10V
C6045	NDC31HJ-471X	CAPACITOR	470pF,50V
C6046	NCB11CK-105X	CAPACITOR	1µF,16V
C6049	NCB11CK-105X	CAPACITOR	1µF,16V
C6051	NCB11CK-105X	CAPACITOR	1µF,16V
C6052	NCB21AK-105X	CAPACITOR	1µF,10V
C6053	NCB21AK-105X	CAPACITOR	1µF,10V
C6054	NDC31HJ-330X	CAPACITOR	33pF,50V
C6055	NCB31HK-821X	CAPACITOR	820pF,50V
C6056	NEA71CM-106X	E CAPACITOR	10µF,16V
C6058	NCB11CK-105X	CAPACITOR	1µF,16V
C6060	NCB11CK-105X	CAPACITOR	1µF,16V
C6061	NDC31HJ-330X	CAPACITOR	33pF,50V
C6064	NCB11CK-105X	CAPACITOR	1µF,16V
C6065	NEA71CM-106X	E CAPACITOR	10µF,16V
C6066	NCB31HK-562X	CAPACITOR	0.0056µF,50V
C6067	NCB11EK-104X	CAPACITOR	0.1µF,25V
C6201	NEA71CM-106X	E CAPACITOR	10µF,16V
C7101	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C7102	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C7103	NCB31HK-102X	CAPACITOR	0.001µF,50V
C7105	NDC31HJ-270X	CAPACITOR	27pF,50V
C7108	NBE41AM-106X	T CAPACITOR	10µF,10V
C7110	NCB21CK-104X	CAPACITOR	0.1µF,16V
C7112	NBE20JM-106X	T CAPACITOR	10µF,6.3V
L1001	NQL164K-220X	COIL	22µH
L1002	NQL164K-220X	COIL	22µH
L1003	NQL164K-220X	COIL	22µH
L1005	NQL184J-390X	COIL	39µH
L1401	NQL164K-100X	COIL	10µH
L2151	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2152	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L3001	NQL184J-100X	COIL	10µH

⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L3002	NQL302N-100X	COIL	10μH
L3005	NQL302N-100X	COIL	10μH
L3006	NQL184J-100X	COIL	10μH
L3007	NQL302N-100X	COIL	10μH
L3010	NQL302N-100X	COIL	10μH
L3011	NQL302N-100X	COIL	10μH
L3201	NQL302N-100X	COIL	10μH
L3202	NQL085J-120X	COIL	12μH
L3204	NQL302N-100X	COIL	10μH
L3207	NQL03BK-220X	COIL	22μH
L3208	NQL302N-100X	COIL	10μH
L3209	NQL302N-100X	COIL	10μH
L3501	NQL302N-100X	COIL	10μH
L3503	NQL302N-100X	COIL	10μH
L3511	NQL315K-470X	COIL	47μH
L3512	NQL315K-470X	COIL	47μH
L3701	NQL302N-100X	COIL	10μH
L4201	NQL302N-100X	COIL	10μH
L4202	NQL302N-100X	COIL	10μH
L4301	NQR0129-002X	FERRITE BEAD	
L4302	NQR0129-002X	FERRITE BEAD	
L4303	NQR0129-002X	FERRITE BEAD	
L4304	NQR0129-002X	FERRITE BEAD	
L4801	NQL164K-220X	COIL	22μH
L4851	NQR0129-002X	FERRITE BEAD	
L4852	NQL164K-220X	COIL	22μH
L4853	NQL302N-100X	COIL	10μH
L5501	NQL164K-220X	COIL	22μH
L5502	NQL164K-220X	COIL	22μH
L5503	NQL164K-220X	COIL	22μH
L5504	NQR0129-002X	FERRITE BEAD	
L5505	NQR0129-002X	FERRITE BEAD	
L5506	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L5603	NQR0129-002X	FERRITE BEAD	
L6001	NQL17CM-100X	COIL	10μH
L6002	NQL17CM-100X	COIL	10μH
L6003	NQLZ010-470X	COIL	47μH
L6004	NQLZ010-470X	COIL	47μH
L6005	NQL17CM-390X	COIL	39μH
L6006	NQL17CM-390X	COIL	39μH
L6007	NQL17CM-390X	COIL	39μH
L6008	NQL03BK-220X	COIL	22μH
L6009	NQL03BK-100X	COIL	10μH
L6010	NQL03BK-220X	COIL	22μH
L7101	NQL144K-100X	COIL	10μH
L7102	NRS181J-0R0X	MG RESISTOR	0 ,1/8W
L7103	NQL144K-100X	COIL	10μH
X1001	NAX0200-001X	C OSCILLATOR	
X1002	NAX0267-001X	CRYSTAL RESONATOR	
X1401	NAX0266-001X	CRYSTAL RESONATOR	
X3001	NAX0206-001X	CRYSTAL RESONATOR	
X4301	NAX0009-001X	CXO	
SW503	NSW0092-001X	SLIDE SWITCH	
T6001	NQS0028-001X	SW TRANSF	
J502	YQ32092-3	BATTERY TERMINAL UNIT	
J503	PEMC1203	MINI JACK	
J504	LY30862-001B	JACK UNIT	
J505	PEMC1032	MINI DIN CONNECTOR	
J5503	YU40017-020-4	THIN WIRE	
CN101	QGB0509M1-A0X	CONNECTOR	
CN104	QGF0507F1-20X	FPC CONNECTOR	

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	CN105	QGB0801M1-30X	CONNECTOR	
	CN106	QGF0503F2-14X	FFC/FPC CONNECTOR	
	CN107	QGF0510F2-22X	FPC CONNECTOR	
	CN108	QGA1201C2-02X	CONNECTOR	
	CN109	QGF0510F2-14X	FPC CONNECTOR	
	CN110	QGF0507F1-10X	FPC CONNECTOR	
	CN111	QGA1201C2-02X	CONNECTOR	
⚠	F6001	NMFZ006-1R6X-K	FUSE	T1.6A
⚠	F6002	NMFZ006-1R6X-K	FUSE	T1.6A
	F6003	NRSA02J-0R0X	MG RESISTOR	0 ,1/10W
⚠	F6005	NMFZ006-R50X-K	FUSE	T0.5A
⚠	F6006	NMFZ006-R50X-K	FUSE	T0.5A
⚠	F7101	NMFZ001-R20X-J1	FUSE	T0.2A
	SD1	LY40559-001A	SHIELD SHEET	
	SD2	LY41501-001A	SHIELD PLATE	

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SECOND BOARD ASSEMBLY <02>

	PW1	YB10234D1-03	SECOND BOARD ASSY	
	IC1601	BA6865KV	IC	
	IC1602	BA6254FS	TR ARRAY	
	IC1603	BA6254FS	TR ARRAY	
	IC2101	AK4518-VF-X	IC	
	IC2131	BA15218F-XE	IC	
	IC2201	BH7760KV	IC	
	IC2501	BA15218F-XE	IC	
	IC3502	AN3731FHQ	IC(DIGITAL)	
	Q1601	DTA114EE	TRANSISTOR	
	Q1602	DTC144EE	TRANSISTOR	
	Q2201	2SC4617/QR/-X	TRANSISTOR	
	Q2204	2SC4617/QR/-X	TRANSISTOR	
	Q2205	UMX1N	PAIR TRANSISTOR	
	Q2206	DTC144EE	TRANSISTOR	
	Q2451	UMX1N	PAIR TRANSISTOR	
	Q2452	2SA1774/QR/-X	TRANSISTOR	
	Q2453	2SA1774/QR/-X	TRANSISTOR	
	Q2454	2SC4617/QR/-X	TRANSISTOR	
	Q2455	DTC144EE	TRANSISTOR	
	Q2601	2SA1774/QR/-X	TRANSISTOR	
	Q2602	2SA1774/QR/-X	TRANSISTOR	
	Q2603	2SC4617/QR/-X	TRANSISTOR	
	Q2604	2SA1774/QR/-X	TRANSISTOR	
	Q2605	2SA1774/QR/-X	TRANSISTOR	
	Q3505	2SC4226/4/-X	TRANSISTOR	
	Q3506	2SC4226/4/-X	TRANSISTOR	
	Q3507	2SD1979/S/-X	TRANSISTOR	
	Q3508	2SD1979/S/-X	TRANSISTOR	
	Q3509	2SA1577/QR/-X	TRANSISTOR	
	D1602	DAP222	DIODE	
	D1603	DAP222	DIODE	
	D1604	DAP222	DIODE	
	D2451	DAN222	DIODE	
	D2452	DAP222	DIODE	
	D2453	DAN222	DIODE	
	R1601	NRSA63J-681X	MG RESISTOR	680,1 /16W
	R1602	NRSA63J-124X	MG RESISTOR	120k,1 /16W
	R1603	NRSA63J-472X	MG RESISTOR	4.7k,1 /16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		R1604	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R1605	NRSA63J-223X	MG RESISTOR 22k ,1/16W
		R1606	NRV142F-R22X	CMF RESISTOR 0.22 ,1/4W
		R1609	NRS12BK-R68W	MG RESISTOR 0.68 ,1/2W
		R1610	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R1611	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R1612	NRSA63J-274X	MG RESISTOR 270k ,1/16W
		R1613	NRSA63J-272X	MG RESISTOR 2.7k ,1/16W
		R1614	NRSA63J-154X	MG RESISTOR 150k ,1/16W
		R1615	NRSA63J-474X	MG RESISTOR 470k ,1/16W
		R1616	NRVA63D-202X	CMF RESISTOR 2k ,1/16W
		R1617	NRSA63J-473X	MG RESISTOR 47k ,1/16W
		R1618	NRSA63J-203X	MG RESISTOR 20k ,1/16W
		R1619	NRSA63J-393X	MG RESISTOR 39k ,1/16W
		R1620	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R1621	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R1622	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R1623	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R1625	NRSA63J-511X	MG RESISTOR 510 ,1/16W
		R1626	NRSA63J-511X	MG RESISTOR 510 ,1/16W
		R1627	NRSA63J-511X	MG RESISTOR 510 ,1/16W
		R1628	NRSA63J-511X	MG RESISTOR 510 ,1/16W
		R1629	NRSA63J-105X	MG RESISTOR 1M ,1/16W
		R1630	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R1631	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R1634	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R1635	NRSA63J-472X	MG RESISTOR 4.7k ,1/16W
		R1636	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R1637	NRSA63J-124X	MG RESISTOR 120k ,1/16W
		R2102	NRSA63J-100X	MG RESISTOR 10 ,1/16W
		R2107	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2108	NRSA63J-471X	MG RESISTOR 470 ,1/16W
		R2109	NRSA63J-471X	MG RESISTOR 470 ,1/16W
		R2112	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2113	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2114	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2115	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2116	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2117	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2118	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2131	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2132	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2133	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2134	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2135	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2136	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2137	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R2138	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R2139	NRSA63J-473X	MG RESISTOR 47k ,1/16W
		R2140	NRSA63J-683X	MG RESISTOR 68k ,1/16W
		R2206	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2210	NRSA63J-564X	MG RESISTOR 560k ,1/16W
		R2211	NRSA63J-564X	MG RESISTOR 560k ,1/16W
		R2212	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R2213	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R2221	NRSA63J-105X	MG RESISTOR 1M ,1/16W
		R2224	NRSA63J-332X	MG RESISTOR 3.3k ,1/16W
		R2226	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2227	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R2232	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2234	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2235	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2260	NRSA63J-153X	MG RESISTOR 15k ,1/16W
		R2263	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2264	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2265	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2273	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2432	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R2453	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R2454	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R2455	NRSA63J-332X	MG RESISTOR 3.3k ,1/16W
		R2456	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R2457	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R2458	NRSA63J-104X	MG RESISTOR 100k ,1/16W
		R2501	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2502	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2503	NRSA63J-153X	MG RESISTOR 15k ,1/16W
		R2504	NRSA63J-153X	MG RESISTOR 15k ,1/16W
		R2505	NRSA63J-682X	MG RESISTOR 6.8k ,1/16W
		R2506	NRSA63J-682X	MG RESISTOR 6.8k ,1/16W
		R2507	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2508	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2509	NRSA63J-470X	MG RESISTOR 47 ,1/16W
		R2510	NRSA63J-470X	MG RESISTOR 47 ,1/16W
		R2511	NRSA63J-470X	MG RESISTOR 47 ,1/16W
		R2601	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2602	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2604	NRSA63J-472X	MG RESISTOR 4.7k ,1/16W
		R2606	NRSA63J-472X	MG RESISTOR 4.7k ,1/16W
		R2609	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2612	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2613	NRSA63J-681X	MG RESISTOR 680 ,1/16W
		R2614	NRSA63J-681X	MG RESISTOR 680 ,1/16W
		R2615	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2618	NRSA63J-112X	MG RESISTOR 1.1k ,1/16W
		R2621	NRSA63J-112X	MG RESISTOR 1.1k ,1/16W
		R2623	NRSA63J-333X	MG RESISTOR 33k ,1/16W
		R2624	NRSA63J-682X	MG RESISTOR 6.8k ,1/16W
		R2625	NRSA63J-333X	MG RESISTOR 33k ,1/16W
		R2626	NRSA63J-682X	MG RESISTOR 6.8k ,1/16W
		R2627	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2629	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2630	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2632	NRSA63J-222X	MG RESISTOR 2.2k ,1/16W
		R2633	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R2634	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R3542	NRSA63J-0R0X	MG RESISTOR 0 ,1/16W
		R3543	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R3544	NRSA63J-152X	MG RESISTOR 1.5k ,1/16W
		R3545	NRSA63J-100X	MG RESISTOR 10 ,1/16W
		R3546	NRSA63J-152X	MG RESISTOR 1.5k ,1/16W
		R3547	NRSA63J-123X	MG RESISTOR 12k ,1/16W
		R3548	NRSA63J-680X	MG RESISTOR 68 ,1/16W
		R3550	NRSA63J-471X	MG RESISTOR 470 ,1/16W
		R3551	NRSA63J-103X	MG RESISTOR 10k ,1/16W
		R3553	NRSA63J-271X	MG RESISTOR 270 ,1/16W
		R3554	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R3555	NRSA63J-152X	MG RESISTOR 1.5k ,1/16W
		R3556	NRSA63J-123X	MG RESISTOR 12k ,1/16W
		R3557	NRSA63J-680X	MG RESISTOR 68 ,1/16W
		R3558	NRSA63J-102X	MG RESISTOR 1k ,1/16W
		R3559	NRSA63J-181X	MG RESISTOR 180 ,1/16W

REF No.	PART No.	PART NAME, DESCRIPTION	
R3560	NRSA63J-181X	MG RESISTOR	180 ,1/16W
R3561	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R3562	NRSA63J-473X	MG RESISTOR	47k ,1/16W
R3563	NRSA63J-472X	MG RESISTOR	4.7k ,1/16W
R3570	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
C1601	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1602	NBE41AM-106X	T CAPACITOR	10µF,10V
C1603	NBE41AM-106X	T CAPACITOR	10µF,10V
C1605	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1606	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C1607	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1608	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1609	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1610	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1611	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1612	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1613	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1614	NEA71CM-106X	E CAPACITOR	10µF,16V
C1615	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1616	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1617	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1618	NCB31CK-223X	CAPACITOR	0.022µF,16V
C1619	NCB31CK-223X	CAPACITOR	0.022µF,16V
C1620	NCB31CK-223X	CAPACITOR	0.022µF,16V
C1621	NCB21AK-105X	CAPACITOR	1µF,10V
C1622	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1623	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1625	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1626	NCB31CK-223X	CAPACITOR	0.022µF,16V
C1627	NCB31CK-473X	CAPACITOR	0.047µF,16V
C1628	NCB21EK-104X	CAPACITOR	0.1µF,25V
C1633	NCF21CZ-684X	CAPACITOR	0.68µF,16V
C1635	NCB21EK-104X	CAPACITOR	0.1µF,25V
C1638	NCB21CK-224X	CAPACITOR	0.22µF,16V
C1639	NCB21CK-224X	CAPACITOR	0.22µF,16V
C1640	NCB21CK-224X	CAPACITOR	0.22µF,16V
C2101	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2102	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2103	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2104	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2105	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2106	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2107	NCB21AK-105X	CAPACITOR	1µF,10V
C2108	NCB21AK-105X	CAPACITOR	1µF,10V
C2109	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2110	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C2111	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C2112	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2113	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2114	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2115	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2131	NDC31HJ-221X	CAPACITOR	220pF,50V
C2132	NDC31HJ-221X	CAPACITOR	220pF,50V
C2133	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C2134	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C2135	NCB21AK-105X	CAPACITOR	1µF,10V
C2136	NCB21AK-105X	CAPACITOR	1µF,10V
C2137	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2138	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2201	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2202	NBE20JM-106X	T CAPACITOR	10µF,6.3V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2204	NBE40GM-107X	T CAPACITOR	100µF,4.0V
C2206	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2207	NCB21AK-105X	CAPACITOR	1µF,10V
C2208	NCB21AK-105X	CAPACITOR	1µF,10V
C2210	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2211	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2212	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2215	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2216	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2217	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2222	NCB21AK-105X	CAPACITOR	1µF,10V
C2223	NCB31CK-563X	CAPACITOR	0.056µF,16V
C2224	NCB31CK-563X	CAPACITOR	0.056µF,16V
C2225	NCB31CK-563X	CAPACITOR	0.056µF,16V
C2226	NCB31CK-563X	CAPACITOR	0.056µF,16V
C2237	NCB21AK-105X	CAPACITOR	1µF,10V
C2238	NCB21AK-105X	CAPACITOR	1µF,10V
C2239	NBP21VM-104X	T CAPACITOR	0.1µF,35V
C2240	NBP21VM-104X	T CAPACITOR	0.1µF,35V
C2243	NCB31HK-102X	CAPACITOR	0.001µF,50V
C2244	NCB31HK-102X	CAPACITOR	0.001µF,50V
C2461	NCB21AK-105X	CAPACITOR	1µF,10V
C2462	NCB21AK-105X	CAPACITOR	1µF,10V
C2463	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2501	NCB21AK-105X	CAPACITOR	1µF,10V
C2502	NCB21AK-105X	CAPACITOR	1µF,10V
C2503	NDC31HJ-101X	CAPACITOR	100pF,50V
C2504	NDC31HJ-101X	CAPACITOR	100pF,50V
C2505	NCB21AK-105X	CAPACITOR	1µF,10V
C2506	NCB21AK-105X	CAPACITOR	1µF,10V
C2507	NBE21AM-106X	T CAPACITOR	10µF,10V
C2602	NCB31HK-102X	CAPACITOR	0.001µF,50V
C2604	NCB31HK-102X	CAPACITOR	0.001µF,50V
C2609	NCB21AK-105X	CAPACITOR	1µF,10V
C2612	NCB21AK-105X	CAPACITOR	1µF,10V
C2613	NEA70JM-476X	E CAPACITOR	47µF,6.3V
C2614	NBP21CM-105X	T CAPACITOR	1µF,16V
C2615	NBP21CM-105X	T CAPACITOR	1µF,16V
C2616	NCB31HK-331X	CAPACITOR	330pF,50V
C2617	NCB31EK-123X	CAPACITOR	0.012µF,25V
C2618	NCB31HK-331X	CAPACITOR	330pF,50V
C2619	NCB31EK-123X	CAPACITOR	0.012µF,25V
C2620	NCB31EK-153X	CAPACITOR	0.015µF,25V
C2621	NCB31CK-683X	CAPACITOR	0.068µF,16V
C2622	NCB31EK-153X	CAPACITOR	0.015µF,25V
C2623	NCB31CK-683X	CAPACITOR	0.068µF,16V
C3547	NCB31HK-122X	CAPACITOR	0.0012µF,50V
C3548	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3549	NCB31HK-102X	CAPACITOR	0.001µF,50V
C3550	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3551	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3552	NDC31HJ-470X	CAPACITOR	47pF,50V
C3553	NCB31HK-681X	CAPACITOR	680pF,50V
C3554	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3555	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C3556	NDC31HJ-330X	CAPACITOR	33pF,50V
C3557	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3558	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3559	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3560	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C3561	NCB31EK-103X	CAPACITOR	0.01µF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3562	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3563	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3564	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3565	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3566	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3567	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3568	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3569	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3570	NCB31HK-152X	CAPACITOR	0.0015μF,50V
C3571	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3572	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3573	NDC31HJ-220X	CAPACITOR	22pF,50V
C3574	NDC31HJ-330X	CAPACITOR	33pF,50V
C3575	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3576	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3577	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C3583	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C3584	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C3585	NDC31HJ-220X	CAPACITOR	22pF,50V
L2101	NQL144K-100X	COIL	10μH
L2201	NQL315K-100X	COIL	10μH
L2451	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2452	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2453	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2454	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2601	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2602	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2603	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L3506	NQL302N-100X	COIL	10μH
L3507	NQL302N-100X	COIL	10μH
L3508	NQL085J-220X	COIL	22μH
L3509	NQL085J-220X	COIL	22μH
L3510	NQL302N-100X	COIL	10μH
CN301	QGB0509L1-A0X	CONNECTOR	
CN302	QGA1201F2-03X	CONNECTOR	
CN303	QGA1201F2-05X	CONNECTOR	
CN401	QGF0506F1-35X	FPC CONNECTOR	
CN402	QGF0503C1-18X	FFC/FPC CONNECTOR	
CN403	QGF0512C1-06X	FPC CONNECTOR	
CN404	QGF0512C1-08X	FPC CONNECTOR	
SD1	LY30969-001A	SHIELD CASE	
SD2	LY30970-001A	SHIELD COVER(1)	

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JUNCTION BOARD ASSEMBLY <03>

PW2	YB10234A2-03	JUNCTION BOARD ASSY	
SW501	NSW0095-001X	DETECT SWITCH	
CN501	QGF0506F1-35X	FPC CONNECTOR	
CN502	QGF0507F1-15X	FPC CONNECTOR	
CN503	QGF0505F2-11X	FPC CONNECTOR	
CN504	QGF0501F2-06X	FPC CONNECTOR	

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CCD BOARD ASSEMBLY <04>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB20836B-01-SS	CCD BOARD ASSY	
Q5002	2SK662/PQR/-X	MOS FET	
R5002	NRSA02J-105X	MG RESISTOR	1M ,1/10W
R5003	NRSA02J-0R0X	MG RESISTOR	0 ,1/10W
R5004	NRSA02J-472X	MG RESISTOR	4.7k ,1/10W
R5007	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
C5001	NBP81DM-155X	T CAPACITOR	1.5μF,20V
C5002	NCB21CK-104X	CAPACITOR	0.1μF,16V
C5003	NCB21CK-104X	CAPACITOR	0.1μF,16V
C5004	NCB21HK-222X	CAPACITOR	0.0022μF,50V
C5005	NCB21CK-104X	CAPACITOR	0.1μF,16V
C5006	NDC21HJ-390X	CAPACITOR	39pF,50V
L5001	NRSA02J-0R0X	MG RESISTOR	0 ,1/10W

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MIC JACK BOARD ASSEMBLY <05>

PW2	YB10233A2-02	MIC JACK BOARD ASSY	
L1	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L2	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L3	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
L4	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
J1	QNS0005-001	3.5 JACK	
CN1	QGA1201C2-05X	CONNECTOR	

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BL BOARD ASSEMBLY <06>

PW2	YB20838C2-01	BL BOARD ASSY	
Q7301	2SK2742	POWER MOS FET	
R7301	NRSA63J-104X	MG RESISTOR	100k ,1/16W
C7301	NBP71CM-336X	T CAPACITOR	33μF,16V
C7302	NCF31CZ-104X	CAPACITOR	0.1μF,16V
L7301	NQL144K-100X	COIL	10μH
T7301	NQH0006-001X	FB TRANSF	
BL7301	NLL0006-001	LAMP	
CN7301	QGF0512C1-06X	FPC CONNECTOR	

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ZOOM UNIT<08>

PW	LY10121-001C	ZOOM UNIT

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OPERATION(DECK)UNIT <09>

REF No.	PART No.	PART NAME, DESCRIPTION	
PW	LY10120-004A	OPERATION(DECK)UNIT	

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VF BOARD ASSEMBLY <10>

REF No.	PART No.	PART NAME, DESCRIPTION	
PW1	YB20838C1-01	VF BOARD ASSY	
IC7201	CXA2503AR	IC	
Q7201	2SC4655/BC/-X	TRANSISTOR	
D7201	MA365	VARI CAP DIODE	
R7201	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R7202	NRSA63J-222X	MG RESISTOR	2.2k ,1/16W
R7203	NRSA63J-272X	MG RESISTOR	2.7k ,1/16W
R7204	NRSA63J-561X	MG RESISTOR	560 ,1/16W
R7205	NRSA63J-104X	MG RESISTOR	100k ,1/16W
R7206	NRSA63J-274X	MG RESISTOR	270k ,1/16W
R7207	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R7208	NRSA63J-102X	MG RESISTOR	1k ,1/16W
R7209	NRSA63J-333X	MG RESISTOR	33k ,1/16W
R7210	NRSA63J-103X	MG RESISTOR	10k ,1/16W
R7211	NRVA63D-122X	CMF RESISTOR	1.2k ,1/16W
R7212	NRVA63D-182X	CMF RESISTOR	1.8k ,1/16W
R7213	NRVA63D-153X	CMF RESISTOR	15k ,1/16W
R7214	NRVA63D-272X	CMF RESISTOR	2.7k ,1/16W
R7215	NRVA63D-153X	CMF RESISTOR	15k ,1/16W
R7216	NRVA63D-153X	CMF RESISTOR	15k ,1/16W
R7217	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R7219	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
R7221	NRVA63D-563X	CMF RESISTOR	56k ,1/16W
R7222	NRVA63D-393X	CMF RESISTOR	39k ,1/16W
R7226	NRSA63J-563X	MG RESISTOR	56k ,1/16W
R7227	NRSA63J-223X	MG RESISTOR	22k ,1/16W
R7229	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R7230	NRSA63J-101X	MG RESISTOR	100 ,1/16W
R7231	NRSA63J-0R0X	MG RESISTOR	0 ,1/16W
C7201	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7202	NCB21EK-333X	CAPACITOR	0.033µF,25V
C7203	NCB11CK-105X	CAPACITOR	1µF,16V
C7204	NCF11CZ-225X	CAPACITOR	2.2µF,16V
C7205	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C7206	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7207	NDC31HJ-221X	CAPACITOR	220pF,50V
C7208	NDC31HJ-560X	CAPACITOR	56pF,50V
C7209	NCF21CZ-105X	CAPACITOR	1µF,16V
C7210	NCB11CK-105X	CAPACITOR	1µF,16V
C7211	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7212	NCF21CZ-105X	CAPACITOR	1µF,16V
C7213	NCF31AZ-105X	CAPACITOR	1µF,10V
C7214	NCF31AZ-105X	CAPACITOR	1µF,10V
C7215	NCF31AZ-105X	CAPACITOR	1µF,10V
C7216	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C7217	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7218	NBP41CM-106X	T CAPACITOR	10µF,16V
C7219	NCB31EK-103X	CAPACITOR	0.01µF,25V

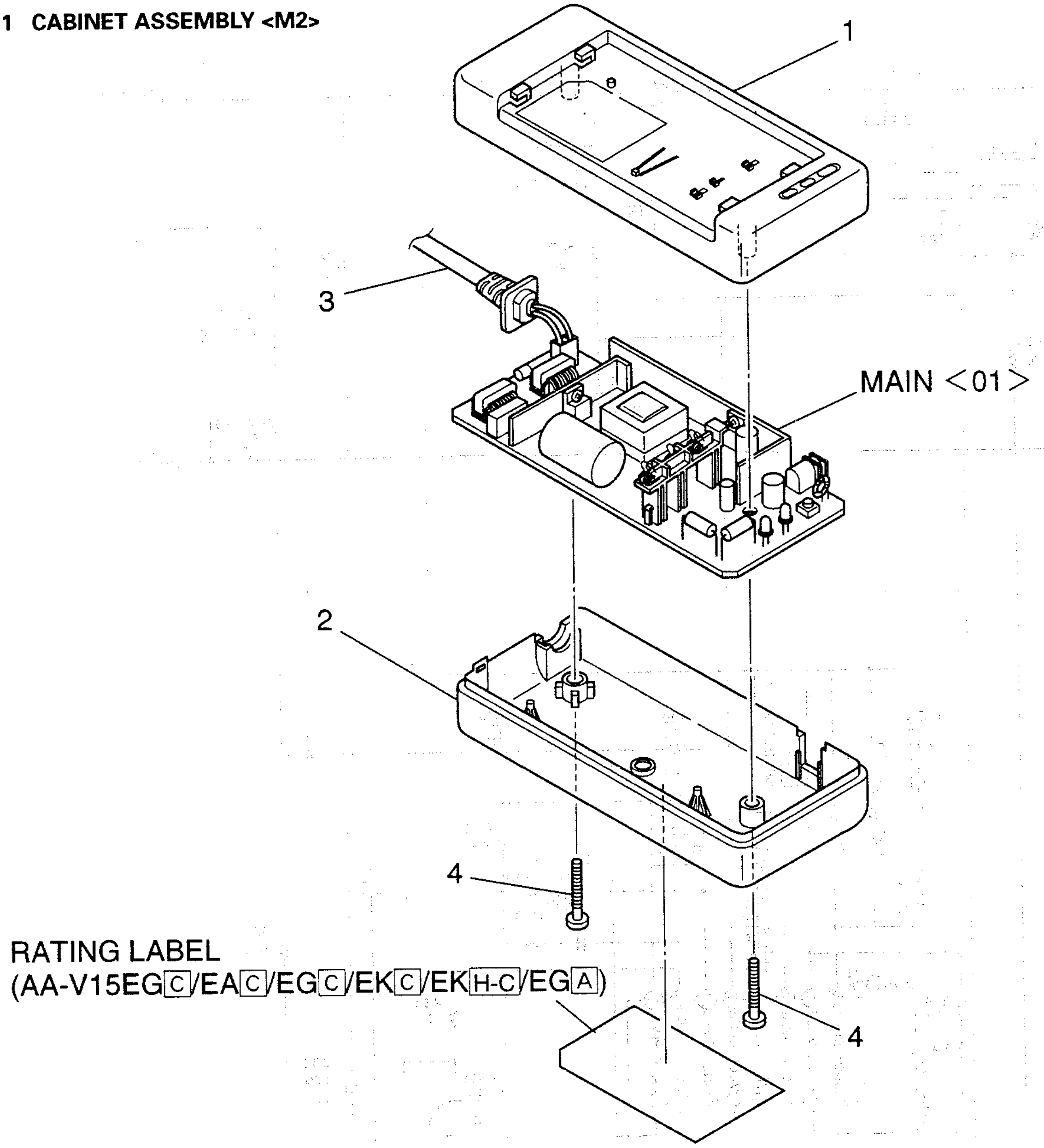
# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C7220	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C7221	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C7222	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C7223	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7227	NCB11CK-105X	CAPACITOR	1µF,16V
C7228	NCB31EK-103X	CAPACITOR	0.01µF,25V
C7229	NCF21CZ-105X	CAPACITOR	1µF,16V
C7230	NBE20JM-106X	T CAPACITOR	10µF,6.3V
L7201	NQL144K-100X	COIL	10µH
L7202	NQL144K-100X	COIL	10µH
L7203	NQL144K-100X	COIL	10µH
L7204	NQL184J-120X	COIL	12µH
L7205	NQL144K-100X	COIL	10µH
CN7201	QGF0503C1-18X	FFC/FPC CONNECTOR	
CN7202	QGF0503C1-16X	FFC/FPC CONNECTOR	

SECTION 6
AC POWER ADAPTER

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

6.1 CABINET ASSEMBLY <M2>



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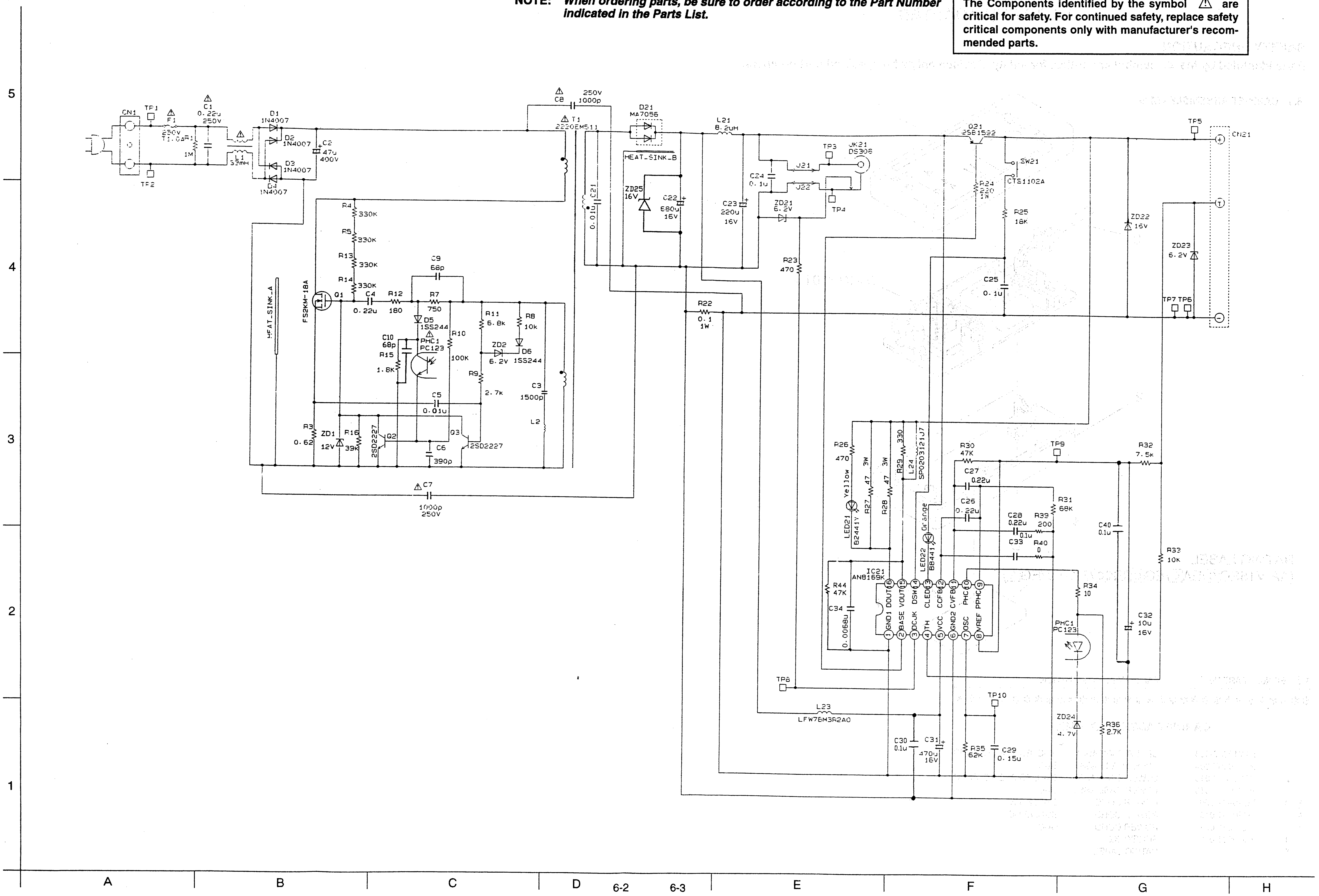
CABINET ASSEMBLY <M2>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	1	PTY10067-003	UPPER CASE ASSY	EG-C, EG-A, EK-C, EKHC
		PTY10067-004	UPPER CASE ASSY	EA-C
	2	PTY10067-013	LOWER CASE ASSY	EG-C, EG-A, EK-C, EKHC
		PTY10067-015	LOWER CASE ASSY	EA-C
⚠	3	YQ10531-006	POWER CORD	EG-C, EG-A
⚠		YQ10531-010	POWER CORD	EK-C, EKHC
⚠		YQ10531-054	POWER CORD	EA-C
	4	YQ10531-011	SCREW, X2	
⚠	5	–	RATING LABEL	

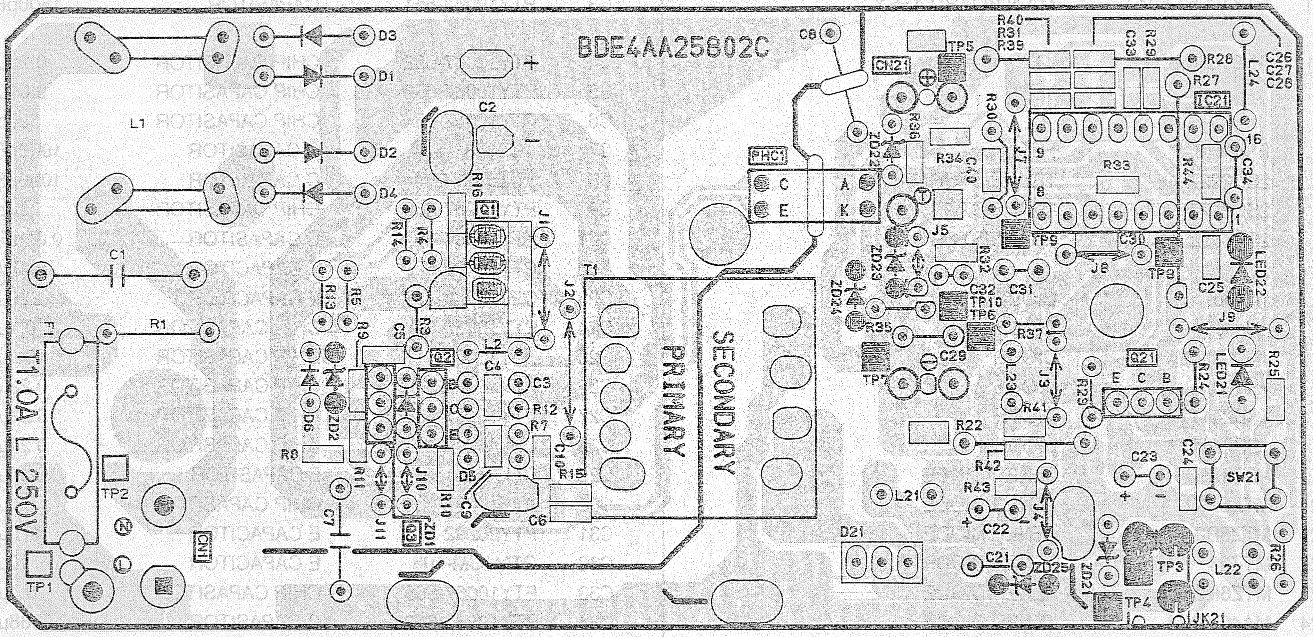
6.2 SCHEMATIC DIAGRAM

NOTE: ***When ordering parts, be sure to order according to the Part Number indicated in the Parts List.***

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.


5
4
3
2
1
A
B
C
D
E
F
G
H
CN1
TP1
TP2
F1
250V
T1.0A
R1
1M
C1
0.22u
250V
L1
33mH
D1
1N4007
D2
1N4007
D3
1N4007
D4
1N4007
C2
47u
400V
C8
250V
1000p
T1
2220EM511
D21
MA7056
HEAT_SINK_B
ZD25
16V
C22
680u
16V
C21
0.01u
L21
8.2uH
C23
220u
16V
C24
0.1u
J21
J22
ZD21
6.2V
TP3
JK21
DS306
TP4
R23
470
R22
0.1
1W
Q21
2SE1592
R24
220
1W
SW21
CTS1102A
R25
18K
C25
0.1u
ZD22
16V
ZD23
6.2V
TP5
CN21
TP7
TP6
HEAT_SINK_A
FS2KM-18A
Q1
R4
330K
R5
330K
R13
330K
R14
330K
C4
0.22u
R12
180
C9
68p
R7
750
D5
1SS244
PHC1
PC123
C10
68p
R15
1.8K
R10
100K
R11
6.8K
R8
10K
ZD2
6.2V
D6
1SS244
R9
2.7K
C3
1500p
L2
C5
0.01u
R3
0.62
ZD1
12V
R16
39K
2SD2227
Q2
Q3
2SD2227
C6
390p
C7
1000p
250V
R26
470
LED21
B2441Y
Yellow
R27
47
3W
R28
47
3W
R29
330
L24
SP0203121J7
LED22
B8441
Orange
IC21
AN8169K
1 GND1
2 BASE
3 DCJK
4 TH
5 VCC
6 GND2
7 OSC
8 VREF
16 DOUT
15 VOUT
14 DSW
13 CLED
12 CCFB
11 CVFB
10 PHC
9 PPHC
R44
47K
C34
0.0068u
TP8
L23
LFW76M3R2A0
C30
0.1u
C31
470u
16V
R30
47K
C27
0.22u
C26
0.22u
C28
0.22u
R39
200
C33
0.1u
R40
0
R31
68K
TP9
TP10
R35
62K
C29
0.15u
R34
10
PHC1
PC123
ZD24
4.7V
R36
2.7K
C32
10u
16V
C40
0.1u
R32
7.5K
R33
10K

6.3 CIRCUIT BOARD


BDE4AA25802C
D3
D1
D2
D4
L1
C2
+
-
C1
R1
F1
T1.0A L 250V
TP2
TP1
N
L
CN1
R16
Q1
R14
R4
J1
R13
R5
R9
C5
R3
J2
T1
L2
Q2
C4
C3
R12
R7
C10
R15
D6
ZD2
R8
R11
J10
R10
D5
C9
C6
C7
J11
D3
ZD1
PRIMARY
SECONDARY
C8
PHC1
C
E
A
K
CN21
TP5
R40
R31
R39
R36
ZD22
R30
R34
C40
J7
R33
R28
R27
IC21
R29
C33
L24
C26
C27
C28
16
9
8
1
R44
C34
J5
ZD23
ZD24
R32
C32
C31
TP10
TP6
TP9
C30
J8
TP8
C25
LED22
J9
R35
R37
C29
TP7
L23
J3
R29
Q21
E
C
B
R24
LED21
R25
R41
R22
R42
R43
C23
C24
SW21
L21
C22
J4
D21
C21
ZD25
ZD21
TP3
TP4
L22
R26
JK21

.4 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <01>

⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
⚠	PW1	PTY10067-504	MAIN BOARD ASSY	
	IC21	AN8169K	IC	
	Q1	FSKM18A	FET	
	Q2	2SD2227	TRANSISTOR	
	Q3	2SD2227	TRANSISTOR	
	Q21	2SB1592	TRANSISTOR	
	D1	1N4007	DIODE	
	D2	1N4007	DIODE	
	D3	1N4007	DIODE	
	D4	1N4007	DIODE	
	D5	1SS244T77	DIODE	
	D6	1SS244T77	DIODE	
	ZD1	MTZ12	ZENER DIODE	
	ZD2	MTZ6R2	ZENER DIODE	
	ZD21	MTZ6R2	ZENER DIODE	
	ZD22	MTZ16	ZENER DIODE	
	ZD23	MTZ6R2	ZENER DIODE	
	ZD24	MA4047NM	ZENER DIODE	
	LED21	YQ10531-543	LED	
	LED22	YQ10531-541	LED	
	R1	QRN141J-105	RESISTOR	1M , 1/4W
	R3	PTY10067-601	RESISTOR	0.62 ,1W
	R4	PTY10067-602	RESISTOR	330k ,1/W
	R5	PTY10067-602	RESISTOR	330k ,1/W
	R6	PTY10067-603	RESISTOR	3.9M ,1/2W
	R7	PTY10067-619	RESISTOR	750 ,1/4W
	R8	PTY10067-604	CHIP RESISTOR	10k ,1/10W
	R9	PTY10067-605	CHIP RESISTOR	2.7k ,1/10W
	R10	PTY10067-606	CHIP RESISTOR	100k ,1/10W
	R11	PTY10067-607	CHIP RESISTOR	6.8k ,1/10W
	R12	PTY10067-608	CHIP RESISTOR	180 ,1/4W
	R13	PTY10067-602	RESISTOR	330k ,1/W
	R14	PTY10067-602	RESISTOR	330k ,1/W
	R15	PTY10067-609	CHIP RESISTOR	1.8k ,1/10W
	R16	PTY10067-610	CHIP RESISTOR	39k ,1/10W
	R22	QRZ0192-R10X	MF RESISTOR	11 ,1/4W
	R23	QRZ0125-471	RESISTOR	0.1 ,1W
	R24	QRL01DJ-221X	RESISTOR	220 ,1W
	R25	PTY10067-611	CHIP RESISTOR	18k ,1/10W
	R26	QRZ0125-471	RESISTOR	0.1 ,1W
	R27	QRL037J-470	RESISTOR	47 ,3W
	R28	QRL037J-470	RESISTOR	47 ,3W
	R29	PTY10067-612	CHIP RESISTOR	330 ,1/10W
	R30	QRZ0125-473	CF RESISTOR	47k ,1/4W
	R31	PTY10067-613	CHIP RESISTOR	68k ,1/10W
	R32	PTY10067-614	CHIP RESISTOR	7.5k ,1/10W
	R33	PTY10067-604	CHIP RESISTOR	10k ,1/10W
	R34	PTY10067-620	CHIP RESISTOR	10 ,1/10W
	R35	PTY10067-616	RESISTOR	62k ,1/4W
	R36	PTY10067-605	CHIP RESISTOR	2.7k ,1/10W
	R39	PTY10067-617	CHIP RESISTOR	200 ,1/10W
	R40	PTY10067-621	CHIP RESISTOR	0.1 ,1/10W
	R44	QRZ0125-474	CHIP RESISTOR	470k ,
⚠	C1	PTY10067-663	F CAPASITOR	0.22μF,275V
	C2	YQ10626-402	E CAPACITOR	47μF,400V
	C3	PTY10067-651	CAPASITOR	1500pF,250V
	C4	PTY10067-652	CHIP CAPASITOR	0.22μF,16V
	C5	PTY10067-653	CHIP CAPASITOR	0.01μF,50V
	C6	PTY10067-654	CHIP CAPASITOR	390pF,50V
⚠	C7	YQ10531-514	C CAPASITOR	1000pF,250V
⚠	C8	YQ10531-514	C CAPASITOR	1000pF,250V
	C9	PTY10067-656	CHIP CAPASITOR	68pF,50V
	C21	PTY10067-657	C CAPASITOR	0.01μF, 250V
	C22	PTY20080-522	E CAPACITOR	680μF, 16V
	C23	QETA1CM-227	E CAPACITOR	220μF,16V
	C24	PTY10067-511	CHIP CAPASITOR	0.1μF,25V
	C25	PTY10067-511	CHIP CAPASITOR	0.1μF,25V
	C26	PTY10067-652	CHIP CAPASITOR	0.22μF,16V
	C27	PTY10067-652	CHIP CAPASITOR	0.22μF,16V
	C28	QFLAHJ-222	CHIP CAPASITOR	0.22μF,16V
	C29	QFLAHJ-153	F CAPASITOR	0.15μF,50V
	C30	PTY10067-661	CHIP CAPASITOR	0.1μF,25V
	C31	PTY20292-310	E CAPACITOR	470μF,16V
	C32	QTM1CM-106	E CAPACITOR	10μF,16V
	C33	PTY10067-665	CHIP CAPASITOR	0.1μF,25V
	C34	PTY10067-662	C CAPASITOR	0.0068μF,50V
	C40	PTY10067-661	CHIP CAPASITOR	0.1μF,25V
⚠	L1	PTY10067-706	LINE FILTER	33mH
	L21	PTY20080-533	COIL	8.2uH
	L23	PTY10067-521	BEAD INDUCTOR	
	L24	PTY10067-707	BEAD INDUCTOR	
⚠	PHC1	PC123X1	PHOTO COUPLER	
⚠	T1	PTY10067-708	SW TRANS	
⚠	F1	PTY10067-102	FUSE	1.0A 250V
	SW21	PTY10067-531	SWITCH	
	HS1	PTY10067-541	HEAT SINK A	
	HS2	PTY10067-542	HEAT SINK B	
	OT1	PTY10067-551	SCREW, X2	
	TB1	PTY10067-561	TERMINAL 1,X2	
	TB2	PTY10067-561	TERMINAL 2,X3	
	HD1	PTY10067-571	TERMINAL HOLDER	
	CN1	YQ10531-506	CONVECTOR	